Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 394

Injection pump

Pump designation : PES6A95D32ORS2896 EP type number : 9 400 084 041

Governor

Governer design. : RSV375...1150A0C834R

Governer no. : 9 420 083 306

Cust. part No. : 82085600

Customer—spec. information Customer : VALMET Motor : 620 DS Power KW : 110.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.70 Tolerance mm : +- 0.05

Check

tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.20

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 11.05
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 87.5

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : + 3.0

	_
Spreed	- control lever
Tolerance	- position degree : 37.0
cm3/1000 strokes : 3.5	- tolerance degree : +- 4.0
-	
Check tolerance	- control lever
cm3/1000s. : 8.0	position degree : 87.0
1,000	tolerance degree : +- 4.0
Del. quantity	L total ance degree 4.0
cm3/1000 strokes : 16.0	RATED SPEED
Tolerance	NATED SPEED
cm3/1000 strokes : + 2.0	rack travel mm : 10.00
Check tolerance	
	- Rated speed rpm : 1185 - Tolerance 1/min : +- 5
	Folderance (Amin : + 3
Spreed	
Tolerance	rack travel mm : 4.00
cm3/1000 strokes : 5.5	- Rated speed rpm : 1245
Check tolerance	- Tolerance 1/min : +- 15
cm3/1000s. : 9.0	_
+	- rack travel mm : 0.85
+	- Tolerance mm : +- 0.55
(B) SETTING OF INJECTION PUMP	- Rated speed rpm : 1360
WITH GOVERNOR	•
+	-
1	
***************************************	- LOW IDLE
GUIDE SLEEVE POSITION	-
+	<u>-</u>
Rated speed rpm : 800	- control lever
<u>, </u>	- position degree : 66.0
Rack travel in mm: 0.65	- tolerance degree : +- 4.0
Tolerance mm : + 0.35	•
	- control lever
governor spring	- position degree : 16.0
pre-tension +	- tolerance degree : + 4.0
click setting x : 3.00	Local and degree 1 - 10
terek setting x . Sido	Setting point w/out bumper spring
FULL LOAD DELIVERY AT FULL LOAD STOP	- Rated speed rpm : 375
TOLL COMP DELIVERY AT TOLL LOAD STOR	rack travel mm : 4.20
Rated speed rpm : 1150	- rack cravet light . 4.20
	Tootings
Aneroid pressure	Testing:
hPa : -	- Rated speed rpm : 375
Del. quantity + cm3/1000 strokes : 87.5 +	•
Tolerance	Tolerance mm : + 0.10
cm3/1000 strokes : + 1.0 +	
Check tolerance	rack travel mm : 2.00
cm3/1000s. : +- 3.0	Rated speed rpm : 450
Spreed	Tolerance 1/min : +- 30
Tolerance	
cm3/1000 strokes : 3.5	Rated speed rpm : 100
Check tolerance +	
cm3/1000s. : 8.0	CRT mm min. : > 19.00
+	•
+	
	TORQUE CONTROL 3
CONTROL LEVER +	
+	Rated speed rpm : 1150
+	rack travel mm : 11.05
,	

Tolerance mm Rated speed rpm	: +- 0.05 : 700
rack travel mm Tolerance mm	: 11.45 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 930 : 11.45 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1030 : 11.05 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: - : 700
Del. quantity cm3/1000 strokes	
Tolerance	
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1185
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
rack travel mm Tolerance mm	: 20.00 : +- 1.00
Del. quantity	
cm3/1000 strokes Tolerance	: 196.0
cm3/1000 strokes Check tolerance	: +- 8.0
cm3/1000s.	: +- 11.0
LOW IDLE	
Del. quantity	
cm3/1000 strokes	: 16.0

lolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	; +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 16.04.96 Test oil : ISO 4113 Combination No. : 9 400 087 334 Injection pump Pump designation : PES6P110A720RS3149 EP type number : 9 400 087 045 Governor Governer design. : RQV350...1300PA772 Governer no. : 9 420 080 209 Cust. part No. Customer-spec. information : FORD Customer : 6,61 TC Motor Power KW : 121.4 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C Tolerance °C : + 2.0 Overflow valve : 1 417 413 025 1.5 Inlet press. bar : Test nozzle holde : 1 688 901 017 assembly Opening pressure 208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 008

6.0

x inside diameter x length mm	: 2.0 : 600
REMARKS	
(A) INJECTION PUM Set equal delivery per values	
BEGINNING OF DELIV	VERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check	: 4.30 : +- 0.05
tolerance mm	: +- 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-5- 3- 6- 2- : 4
Phasing	: 0-60-120-180-240 : -300
BASIC SETTING	
Rated speed rpm	: 1300
Rack travel in mm Tolerance mm	: 13.15 : + 0.05
Del. quantity cm3/1000 strokes	: 106.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

Test lines

Outside diameter :

Del. quantity cm3/1000 strokes: Tolerance cm3/1000 strokes: +- Check tolerance cm3/1000s. : +- Spreed Tolerance cm3/1000 strokes: Check tolerance cm3/1000s. :	}	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 4.0
(B) SETTING OF INJECTION WITH GOVERNOR	I PUMP	CONTROL LEVER	·
GUIDE SLEEVE TRAVEL	<u> </u>	position degree tolerance degree	
Rated speed rpm : 13 guide sleeve	500	RATED SPEED	
Tolerance mm : +-	+	rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm : 5 guide sleeve travel mm :	2.50	rack travel mm	: 4.00 : 1520
Tolerance mm : +-		Rated speed rpm Tolerance 1/min	: + 15
	5.15	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1650
Tolerance mm : + ! Rated speed rpm : 8	00		
guide sleeve travel mm :	4.15	LOW IDLE	
	0.15	control lever	. 17.0
guide sleeve	0.95	position degree tolerance degree	
Tolerance mm : +- (Testing:	
GUIDE SLEEVE POSITION		Rated speed rpm rack travel mm	: 350 : 7.30
Rated speed rpm : 135	50	Tolerance mm	: +- 0.10
Rack travel in mm : 10 Tolerance mm : +-		rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 630 : +- 30
FULL LOAD DELIVERY AT FUL		Rated speed rpm	: 100
Rated speed rpm : 130	+	CRT mm min.	: > 9.00
Aneroid pressure hPa : 100	+	Rated speed rpm	: 405

		+ Tolerance
TORQUE CONTROL		+ cm3/1000 strokes : +- 2.0 + Check tolerance + cm3/1000s. : +- 4.0
Rated speed rpm	1300	t cm3/1000s. : +- 4.0
rack travel mm	: 13.15	Aneroid pressure
Tolerance mm	: +- 0.05	+ hPa : -
		Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm	: 800	+ Del. quantity
rack travel mm	: 13.15	+ cm3/1000 strokes : 77.5
Tolerance mm	: +- 0.05	+ Tolerance
		+ cm3/1000 strokes : +- 1.0
ANEROID/ALTITUDE		+ Check tolerance + cm3/1000s. : +- 4.0
COMPENSATOR TEST		+ (1137 10003: 1.7 4.0
		+ BREAKAWAY
SETTING		†
Rated speed rpm	: 500	+ Rack travel in mm: 12.10
Pressure hPa	: 1000	+ Rated speed rpm : 1365
rack travel mm	: 13.15	Tolerance 1/min : + 5
Tolerance mm		- Totalia Philippi
		+
MEASUREMENT		
Dunnarium ED-		+ STARTING FUEL DELIVERY
Pressure hPa	. 500	Dated anged and
Rated speed rpm	; 500 ; 11 45	Rated speed rpm : 100
rack travel mm		rack travel mm : 20.50 Tolerance mm : + 0.50
Tolerance mm	. — 0.05	, , , , , , , , , , , , , , , , , , ,
Dated speed now	: 500	+ Del. quantity + cm3/1000 strokes : 110.0
Rated speed rpm	• 300	+ Tolerance
Pressure hPa	: 500	cm3/1000 strokes : + 10.0
rack travel mm		Check tolerance
Tolerance mm		+ cm3/1000s. : +- 14.0
- चर्चा च्या स्टब्स (का)		+
Pressure hPa	: 700 : 12.75	+
rack travel mm		+
Tolerance mm	: +- 0.05	
		+ LOW IDLE
START CUT-OUT		† Del. quantity
DIANT COTTON		cm3/1000 strokes : 18.0
Rated speed rpm	: > 230	Tolerance
Rated speed rpm	: < 290	+ cm3/1000 strokes : + 2.0
TOTOG OPOCO I PIN		Check tolerance
Check		+ cm3/1000s. : + 4.5
speed 1/min	: > 210	+ Spreed
Check		Tolerance
speed 1/min	: < 310	+ cm3/1000 strokes : 3.5
,		+ Check tolerance
	DAGTEDYCTICS	+ cm3/1000s. : 5.5
FUEL DELIVERY CHA	RAUTERISTIUS	I
Aneroid pressure		<u> </u>
hPa	: 1000	+
· •	: 800	
Rated speed rom	. 000	I
Rated speed rpm Del. quantity	: 000	+

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 16.04.96 : ISO 4113 Test oil Combination No. : 9 400 087 337 Injection pump Pump designation : PES6P110A720RS3150 EP type number : 9 400 087 046 Governor Governer design. : RQV350...1300PA776 : 9 420 080 212 Governer no. Cust. part No. Customer-spec. information Customer : FORD Motor : 7,8 L-TC Power KW : 136.2 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C 40 Tolerance °C 2.0 : 1 417 413 025 Overflow valve Inlet press. bar : 1.5 Test nozzle holde : 1 688 901 017 assembly Opening pressure 208.5 bar 1.5 Tolerance bar

: 1 680 750 015

6.0

x inside diameter x length mm	: 3.0 : 600
REMARKS	
(A) INJECTION PUM Set equal delivery per values	y quant.
BEGINNING OF DELIV	JERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check	: 4.30 : +- 0.05
tolerance mm	: + 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-5- 3- 6- 2- : 4
Phasing	: 0-60-120-180-240 : -300
Beginning of deliv	very differende
and maximum rack travel Tolerance mm Difference ° CS	: 10.50 : + 1.50 : 2.50
BASIC SETTING	
Rated speed rpm	: 1300
Rack travel in mm Tolerance mm	: 12.05 : + 0.05
Del. quantity cm3/1000 strokes	: 124.0
Tolerance cm3/1000 strokes	: +- 1.0

Test lines

Outside diameter :

	<u> </u>	
Spreed Tolerance cm3/1000 strokes	: 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s.	; 9.0	Rated speed rpm : 1300 Aneroid pressure hPa : 600
Del. quantity cm3/1000 strokes Tolerance	: 23.0	Del. quantity cm3/1000 strokes : 124.0 Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance	+	Check tolerance cm3/1000s. : +- 3.0
cm3/1000s. Spreed	: +- 4.5	Spreed Tolerance
Tolerance cm3/1000 strokes Check tolerance	: 3.5	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
cm3/1000s.	: 5.5	CMD7 (0003 9.0
(B) SETTING OF INJ	JECTION PUMP	CONTROL LEVER
WITH GOVERNOR GUIDE SLEEVE TRAVE		<pre>control lever position degree : 62.0 tolerance degree : +- 4.0</pre>
Rated/speed rpm	+	RATED SPEED
guide sleeve travel mm Tolerance mm	: 7.25 : + 0.05	rack travel mm : 11.00 Rated speed rpm : 1365
Rated speed rpm	: 500	Tolerance 1/min : +- 5 rack travel mm : 4.00
guide sleeve travel mm Tolerance mm	: 2.50 : +- 0.20	rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 1000	rack travel mm : 0.50 Tolerance mm : + 0.50
travel mm Tolerance mm	: 5.15 : + 0.15	Rated speed rpm : 1600
guide sleeve	: 800	LOW IDLE
travel mm Tolerance mm	: + 4.15 : + 0.15	control lever
Rated speed rpm guide sleeve	: 350	position degree : 15.0 tolerance degree : + 4.0
travel mm Tolerance mm	: 0.95 : +- 0.35	Testing:
GUIDE SLEEVE POSIT	TION	Rated speed rpm : 350 rack travel mm : 7.50 Tolerance mm : +- 0.10
Rated speed rpm	: 1350	rack travel mm : 2.00
Rack travel in mm Tolerance mm		Rated speed rpm : 660 Tolerance 1/min : +- 30

Rated speed rpm	: 100	+ Check	240
CRT mm min.	; > 9.50	+ speed 1/min + Check	
Rated speed rpm	: 405	+ speed 1/min	: < 310
TORQUE CONTROL		FUEL DELIVERY	CHARACTER STICS
TORGOE GONTROL		Aneroid pressur	·e
Rated speed rpm	: 1300	+ hPa	: 600
rack travel mm		+ Rated speed rpm	
Tolerance mm	: ← 0.05	+ Del. quantity + cm3/1000 stroke	
Rated speed rpm	: 800	+ Tolerance	. 105.0
Rated speed rpm rack travel mm Tolerance mm	: 12.35	+ cm3/1000 stroke	
Tolerance mm	: +- 0.05	+ Check tolerance	
		+ cm3/1000s.	: +- 4.0
Rated speed rpm	: YUU	† Amanaid masay	•
rack travel mm Tolerance mm	: +- 0.05	+ Aneroid pressur + hPa	·e : 600
COLOUGE IN	0.00	Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s. Aneroid pressur hPa Rated speed rpm Del. quantity cm3/1000 stroke Tolerance	
Rated speed rpm	: 1015	+ Del. quantity	
rack travel mm	: 12.15	+ cm3/1000 stroke	
Tolerance mm	: +- 0.05	† Tolerance	
		+ cm3/1000 stroke	
ANIFORN /AL TITURE			
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000s.	: +- 4.0
CHIPENSATOR TEST		Aneroid pressur	۵
		+ hPa	: ~
SETTING		Rated speed rpm	: 500
		+ Del. quantity	
lated speed rpm	: 500	+ cm3/1000 stroke	s: 70.5
ressure hPa	: 600_	+ Tolerance	
ack travel mm	12.35	+ cm3/1000 stroke	
olerance mm	: +- 0.05	t Check tolerance cm3/1000s.	
IEASUREMENT		† Cm5/10003.	: +- 4.0
Pressure hPa	•	BREAKAWAY	
Rated speed rpm		†	
rack travel mm	: 11.35	T Dank Francis Co.	11 00
Tolerance mm	: 0.05	+ Rack travel in + Rated speed rpm	が : + 1 . UU
ated speed rpm	: 500	+ Rated Speed rpm + Tolerance 1/min	: +- 5
Tica opeca : piii	. 500	1000, 4,100	.
ressure hPa		+	
ack travel mm	: 12.10	+	
olerance mm	: +- 0.10	+ STARTING FUEL D	ELIVERY
	. 2/5	† Patad anald and	. 100
Pressure hPa rack travel mm Folerance mm	• 440 • 44 45	Rated speed rpm	: 100 : 20.50
ock cravec mm	. + n.n5	rack travel mm Tolerance mm	: +- 0.50
Occi di ice iiili	0.05	Del. quantity	
		+ cm3/1000 stroke	
START CUT-OUT		+ Tolerance	
		+ cm3/1000 stroke	
Rated speed rpm	: > 230	+ Check tolerance	
Rated speed rpm	: < 290	+ cm3/1000s.	: +- 74.0
		†	

LOW IDLE

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000s. : 5.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 354

Injection pump

Pump designation : PES6P110A720RS3158

EP type number : 9 400 087 049

Governor

Governer design. : RQV350...1300PA787

Governer no. : 9 420 080 218

Cust. part No.

Customer—spec. information
Customer : FORD
Motor : 6,6 L-TC
Power KW : 125.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 017

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.30 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference °CS : 4.00

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 113.5

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

		+
Spreed Tolerance cm3/1000 strokes	: 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1300
Check tolerance cm3/1000S.	: 9.0	Aneroid pressure hPa Del. quantity
Del. quantity cm3/1000 strokes Tolerance	: 22.0	cm3/1000 strokes : 113.5 Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.0 : +- 4.5	+ Check tolerance + cm3/1000s. : + 3.0 + Spreed
Spreed Tolerance cm3/1000 strokes	,	Tolerance cm3/1000 strokes : 5.0 Check tolerance
Check tolerance cm3/1000s.	: 5.5	cm3/1000s. : 9.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER control lever
GUIDE SLEEVE TRAV		position degree : 62.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 1300	RATED SPEED
travel mm Tolerance mm	: 7.25 : + 0.05	rack travel mm : 10.60 Rated speed rpm : 1365 Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm Tolerance mm	: 500 : 2.50 : + 0.20	rack travel mm : 4.00 Rated speed rpm : 1485 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1000 - : 5.15 - : + 0.15	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1600
Rated speed rpm guide sleeve travel mm Tolerance mm	: 800 - : 4.15 : +- 0.15	LOW IDLE
Rated speed rpm guide sleeve	: 350	control lever position degree : 15.0 tolerance degree : +- 4.0
travel mm Tolerance mm	: 0.95 : +- 0.35	Testing:
GUIDE SLEEVE POSIT	-	Rated speed rpm : 350 rack travel mm : 7.80 Tolerance mm : + 0.10
Rated speed rpm Rack travel in mm Tolerance mm	: 16.50	rack travel mm : 2.00 Rated speed rpm : 720 Tolerance 1/min : + 30

Rated speed rpm	: 100	+
CRT mm min.	: > 9.50	BREAKAWAY
Rated speed rpm TORQUE CONTROL	: 405	Rack travel in mm : 10.60 Rated speed rpm : 1365 Tolerance 1/min : +- 5
TORGUE CONTROL		+ Toterance Triatn : +- 3
Rated speed rpm rack travel mm Tolerance mm		STARTING FUEL DELIVERY
Rated speed rpm rack travel mm Tolerance mm	: 12.15	Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : \(\to 0.50 \) Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.10 : +- 0.10	cm3/1000 strokes : 110.0 + Tolerance - cm3/1000 strokes : +- 10.0 - Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 11.85	- cm3/1000s. : +- 14.0
		LOW IDLE
START CUT-OUT		+ + Del. quantity
Rated speed rpm Rated speed rpm		- cm3/1000 strokes : 22.0 - Tolerance
Check speed 1/min Check	: > 210	+ cm3/1000 strokes : +- 2.0 + Check tolerance + cm3/1000s. : +- 4.5 + Spreed
speed 1/min	: < 310	Tolerance cm3/1000 strokes : 3.5 Check tolerance
FUEL DELIVERY CHA	ARACTERISTICS	cm3/1000s. : 5.5
Aneroid pressure	: -	+
Rated speed rpm Del. quantity cm3/1000 strokes	: 800 : 97.5	
Tolerance cm3/1000 strokes	: +- 2.0	End of test specification sheet
Check tolerance cm3/1000S.	: +- 4.0	‡
Aneroid pressure	: -	† †
Rated speed rpm Del. quantity cm3/1000 strokes	: 900 : 103.5	‡
Tolerance cm3/1000 strokes	: + 2.5	-
Check tolerance cm3/1000s.	: +- 4.5	1

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 367

Injection pump

Pump designation : PES6P110A720RS3151 EP type number : 9 400 087 047

Governor

Governer design. : RQV350...1200PA777

: -1

: 9 420 080 234 Governer no.

Cust. part No. :

Customer-spec. information Customer : FORD : 7,8 L TC Motor : 165.6 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 017 assembly

Opening pressure

208.5 har : +- 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0 x inside diameter: 3.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 4.30 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 14.15 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 142.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. ; **←** 3.0

Spreed Tolerance

cm3/1000 strokes : 5.0

9.0

Check tolerance

cm3/1000s.

Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 5.5	Del. quantity cm3/1000 strokes : 142.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER control lever
GUIDE SLEEVE TRAVEL	+ position degree : 60.0 + tolerance degree : +- 4.0
Rated speed rpm : 1300 guide sleeve	RATED SPEED
travel mm : 7.25 Tolerance mm : + 0.05	rack travel mm : 13.10 Rated speed rpm : 1265 Tolerance 1/min : +- 5
Rated speed rpm : 500 guide sleeve	+
travel mm : 2.50	Rated speed rpm : 1440
Tolerance mm : ← 0.20	Tolerance 1/min : +- 15
Rated speed rpm : 1000	rack travel mm : 0.50
guide sleeve	Tolerance mm : + 0.50
travel mm : 5.15 Tolerance mm : + 0.15	Rated speed rpm : 1600
Rated speed rpm : 800 guide sleeve	LOW IDLE
travel mm : 4.15	+
Tolerance mm : + 0.15	†
Rated speed rpm : 350	+ control lever + position degree : 15.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 0.95	+
Tolerance mm : +- 0.35	Testing:
GUIDE SLEEVE POSITION	Rated speed rpm : 350 rack travel mm : 7.50
GOINE SPEEKE LOSTIINA	Tolerance mm : + 0.10
Rated speed rpm : 1350	rack travel mm : 2.00
Rack travel in mm: 16.50	Rated speed rpm : 650
Tolerance mm : +- 1.30	Tolerance 1/min : + 30
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 100
Rated speed rpm : 1200	CRT mm min. :> 9.00
Aneroid pressure	Rated speed rpm : 405
hPa : 800 -	

		+ Tolerance
TORQUE CONTROL		- + cm3/1000 strokes : +- 1.0 + Check tolerance
Rated speed rpm	• 4200	+ cm3/1000s. : +- 3.0
rack travel mm	: 14.15	Aneroid pressure
Tolerance mm		+ hPa : -
Rated speed rpm	: 809	Ratrd speed rpm : 500 Del. quantity
rack travel mm Tolerance mm	: 14.15	cm3/1000 strokes : 74.0
Tolerance mm	: +- 0.05	+ Tolerance
سينيات بالمسيم وسيوشيون كالموروسون		cm3/1000 strokes : +- 1.0 + Check tolerance
NEROID/ALTITUDE		cm3/1000s. : +- 4.0
TIPLITOR FOR TEST		
TING		+ BREAKAWAY
ited speed rpm	: 500	+ Rack travel in mm : 13.10
essure hPa	: 800	+ Rated speed rpm : 1265
k travel mm	: 14.15	Tolerance 1/min : +- 5
erance mm	: +- 0.05	‡
SUREMENT		STARTING FUEL DELIVERY
essure hPa	; -	+
ed speed rpm		+ Rated speed rpm : 100
k travel mm		+ rack travel mm : 20.50 + Tolerance mm : +- 0.50
rance mm	: 4 0.05	+ Del. quantity
speed rpm	: 500	+ cm3/1000 strokes : 160.0
e hPa	: 390	<pre>+ Tolerance + cm3/1000 strokes : ← 10.0</pre>
e nra avel mm		+ Check tolerance
ce mm		+ cm3/1000S. : + 14.0
sure hPa	: 580	1
travel mm	: 13.75	1
rance mm	: + 0.05	100 700 5
		- LOW IDLE
T CUT-OUT		Del. quantity
speed rpm	; > 230	t cm3/1000 strokes : 18.0 Tolerance
d speed rpm		+ cm3/1000 strokes : +- 2.0
•		Check tolerance
1/min	: > 210	+ cm3/1000s. : + 4.5 + Spreed
		+ Tolerance
k d 1/min	: < 310	- cm3/1000 strokes : 3.5
·		+ Check tolerance - + cm3/1000s. : 5.5
DELIVERY CHA	ARACTERISTICS	
roid pressure		-
	: 800	†
d speed rpm quantity	: 800	‡
000 strokes	: 120.0	+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16,04,96 : ISO 4113 Test oil

Combination No. : 9 400 087 449EB

Injection pump

Pump designation: PES6P120A320/3RS3264

EP type number : 9 400 087 075

Governor

Governer design. : RQV350...1100PA973

Governer no. : 9 420 080 293

Cust. part No. : 3355296-VERSA041

Customer-spec. information Customer : CUMMINS

: 6 CTA - 8.3 L Motor

Power KW : 194.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar Tolerance bar 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 3.50 : + 0.05Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1900

Ragk travel in mm: 11.05 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 190.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 9.0

Del. quantity	Spreed Tolerance
cm3/1000 strokes : 8.0 Tolerance	+ cm3/1000 strokes : 5.0 + Check tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	cm3/1000s. : 9.0
cm3/1000s. : +- 5.0 Spreed	
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 8.0	control lever position degree : 55.0 tolerance degree : +- 4.0
	+
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 110.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 1150	rack travel mm : 10.00
guide sleeve travel mm : 7.05	+ Rated speed rpm : 1765 + Tolerance 1/min : +- 5
Tolerance mm : + 0.05	Total and many
D. I. d d 4400	rack travel mm : 4.00
Rated speed rpm : 1400 guide sleeve	Rated speed rpm : 1325 Tolerance 1/min : +- 15
travel mm : 9.00	+
Tolerance mm : + 0.20	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50
Rated speed rpm : 350	A Rated speed rpm : 1500
guide sleeve travel mm : 1.60	İ
Tolerance mm : +0.20	ļ
Debug aread area (FO	+ LOW IDLE
Rated speed rpm : 650 guide sleeve	I ·
travel firm : 4.50	f control lever
Tolerance mm : +- 0.20	position degree : 70.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	t control lever
	position degree : 15.0
Rated speed rpm : 1325	tolerance degree : +- 4.0
Rack travel in mm : 16.50 Tolerance mm : +- 1.30	Testing:
•	Rated speed rpm : 350
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 6.00 Tolerance mm : + 0.10
FOLL EDAD DELIVERY AT TOLL EDAD STOP	Total drige day . 1 = 0.18
Rated speed rpm : 1100 - Aneroid pressure	Rated speed rpm : 100
hPa : 1200 -	CRT mm min. :> 8.00
Del. quantity cm3/1000 strokes : 190.0 -	Rated speed rpm : 500
Tolerance - cm3/1000 strokes : + 1.0 - Check tolerance -	TORQUE CONTROL
cm3/1000s. : + 4.0	1 LOWAGE COMMON

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: 11.05 : +- 0.05 : 700 : 11.05 : +- 0.05	Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 12.0 Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 117.5 Tolerance cm3/1000 strokes : +- 1.5
SETTING		+ Check tolerance + cm3/1000s. : + 3.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 11.05 : +- 0.05	BREAKAWAY
MEASUREMENT		Rack travel in mm: 10.00 Rated speed rpm: 1165
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 9.00 : + 0.10	Tolerance 1/min : + 5
Rated speed rpm	: 500	+ STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 700 : 10.75 : + 0.15	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 275.0
Pressure hPa rack travel mm Tolerance mm	: 9.55	Tolerance - cm3/1000 strokes : +- 15.0 - Check tolerance - cm3/1000s. : +- 19.0
START CUT-OUT		
Rated speed rpm Rated speed rpm	: > 100 : < 290	LOW IDLE
Check speed 1/min Check	; > 80	Del. quantity cm3/1000 strokes : 8.0 Tolerance
speed 1/min	: < 310	cm3/1000 strokes : +- 3.0 + Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 700	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 8.0
cm3/1000 strokes Tolerance		+
cm3/1000 strokes Check tolerance		+
cm3/1000s.	: 5.0	+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.04.96 : ISO 4113 Test oil

Combination No. : 9 400 087 456

Injection pump

Pump designation : PE6P120A720RS7126 EP type number : 0 412 626 815

Governor

Governer design. : RQV200...1050PA725

Governer no. : 0 421 813 814

Cust. part No. : 1673688

Customer-spec. information Customer : SCANIA : DS11 Motor

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance *C 2.0

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar : +-1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.05 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 14.15 Tolerance mm : \leftarrow 0.05

Del. quantity

cm3/1000 strokes : 231.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes : 6.0	Tolerance mm : +- 2.50
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 225	Rated speed rpm : 700 Aneroid pressure hPa : 900
Rack travel in mm : 4.60 Tolerance mm : +- 0.30	Del. quantity cm3/1000 strokes : 231.0
Del. quantity cm3/1000 strokes : 17.0	Tolerance cm3/1000 strokes : +- 1.0
Tolerance + 2.0 + Check tolerance +	Check tolerance cm3/1000s. : +- 4.0 Spreed
cm3/1000s. : +- 5.0 +-	Tolerance cm3/1000 strokes : 6.0
Tolerance cm3/1000 strokes : 3.0	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 6.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER control lever
GUIDE SLEEVE TRAVEL	position degree : 62.0 tolerance degree : +- 4.0
GOIDE SEELVE TRAVEE	control lever
Rated speed rpm : 225 guide sleeve travel mm : 1.40	position degree : 117.0 tolerance degree : +- 4.0
Tolerance mm : + 0.20	RATED SPEED
Rated speed rpm : 1095 guide sleeve travel mm : 8.30 Tolerance mm : + 0.10	rack travel mm : 13.10 Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm : 350 + guide sleeve	rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : +- 15
Tolerance mm : 2.60 + 0.30	rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm : 650 guide sleeve	Rated speed rpm : 1320
travel mm : 4.30 + Tolerance mm : + 0.30	LOW IDLE
Rated speed rpm : 1215 guide sleeve	EVW IVEE
travel mm : 9.90 Tolerance mm : + 0.20	control lever position degree : 64.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	control lever position degree : 10.0
Rated speed rpm : 1200	tolerance degree : + 4.0
Rack travel in mm: 10.50	Testing:

		+ Rated speed rpm : 1050
Rated speed rpm	225	+ Del. quantity
rack travel mm Tolerance mm	4.60	- cm3/1000 strokes : 222.5
Tolerance mm	: ← 0.10	+ Tolerance
	2.00	+ cm3/1000 strokes : +- 4.0
rack travel mm	: 2.00	+ Check tolerance
Rated speed rpm	390	+ cm3/1000s. : +- 6.0
Tolerance 1/min	: +- 30	†
Dadad was ad was	. 400	Aneroid pressure
Rated speed rpm	: 100	+ hPa : -
ODT		Rated speed rpm : 500
CRT mm min.	; > 0.10	+ Del. quantity + cm3/1000 strokes : 150.5
TODOUE CONTROL		
TORQUE CONTROL		
Dated aread non	, 700	+ Check tolerance + cm3/1000s. :+- 4.0
Rated speed rpm rack travel mm	16.15	T CM3/10005. : += 4.0
rack travel mm Tolerance mm	14.13	T
roterance mm	: +- 0.05	DDEALAUAY
Dated cheed an-	• 1050	† BREAKAWAY
Rated speed rpm	· 10.70	I
rack travel mm Tolerance mm	: +- 0.05	Rack travel in mm: 13.10
roterance mi	: + 0.03	
ANEDOTO (AL TITUDE		
ANEROID/ALTITUDE COMPENSATOR TEST		Ţ
		+ STARTING FUEL DELIVERY
SETTING		†
		Rated speed rpm : 100 + rack travel mm : 20.50
Rated speed rpm	: 500	+ rack travel mm : 20.50 + Tolerance mm : + 0.50
Pressure hPa	: 900	† Tolerance mm : + 0.50
Rated speed rpm Pressure hPa rack travel mm	: 14.15	Del. quantity
Tolerance mm	: +- 0.05	- cm3/1000 strokes : 300.0
		+ Tolerance
MEASUREMENT		cm3/1000 strokes : +- 25.0
		+ Check tolerance
Pressure hPa	: -	+ cm3/1000s. : + 29.0
Rated speed rpm	: 500	+
rack travel mm	: 10.70	+
Tolerance mm	: +- 0.20	+
5		100.70.5
Rated speed rpm	: 500	LOW IDLE
Pressure hPa	: 250	Rated speed rpm : 225
	: 250	+ rack travel mm : 223
rack travel mm	: + 0.10	Tolerance mm : 4.00
Tolerance mm	: +- 0.10	
Dranding 50-	. 510	+ Del. quantity + cm3/1000 strokes : 17.0
Pressure hPa	: 510	
rack travel mm	: 13.05	Tolerance
Tolerance mm	: ← 0.05	+ cm3/1000 strokes : + 2.0
		Check tolerance
		+ cm3/1000s. : + 5.0
		Spreed
	A D A D OTTO TO TO TO TO	Tolerance
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000 strokes : 3.0
		+ Check tolerance
Aneroid pressure	A	+ cm3/1000s. : 6.0
hPa	: 900	+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16,04,96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 458

Injection pump

Pump designation : PE6P12OA32ORS3186 EP type number : 0 411 826 756

Governor

Governer design. : RQV250...1025PA657

: -29

: 9 420 080 312 Governer no.

Cust. part No. : 8124324

Customer-spec. information

: VOLVO-TRUCK Customer

: TD102FS Motor Power KW : 250.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 046

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

208.5 : +- 1.5 Tolerance bar

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 2.65 : +- 0.05 Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm: 10.50 Tolerance mm : \leftarrow 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

700 Rated speed rpm :

Rack travel in mm: 12.15 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 211.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. : +-4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

: 9.0 cm3/1000s.

	+ Del. quantity
Del. quantity	+ cm3/1000 strokes : 211.0
cm3/1000 strokes : 18.5	Tolerance
Tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000 strokes : +- 2.5	+ Check tolerance
Check tolerance	+ cm3/1000s. : +- 4.0
cm3/1000s. : +- 5.0	+ Spreed
Spreed	+ Tolerance
Tolerance	- cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0	Check tolerance
Check tolerance	+ cm3/1000s. : 9.0
cm3/1000s. : 7.0	
	1
(B) SETTING OF INJECTION PUMP	CONTROL LEVER
WITH GOVERNOR	T CONTINUE ELVEN
MIIII GOAFIMON	control lever
	position degree : 65.0
GUIDE SLEEVE TRAVEL	
GOTAL SECAL LUMACE	tolerance degree : +- 4.0
Rated speed rpm : 250	T control lever
guide steeve	+ position degree : 120.0
travel mm : 1.20 Tolerance mm : + 0.10	tolerance degree : +- 4.0
Tolerance mm : + 0.10	DATES COEFS
Rated speed rpm : 900	+ RATED SPEED
	14.40
guide steeve	+ rack travel mm : 11.10
travel mm : 6.50	Rated speed rpm : 1090
Tolerance mm : + 0.20	+ Tolerance 1/min : +- 5
D. A. J	†
Rated speed rpm : 500	rack travel mm : 4.00
guide steeve	+ Rated speed rpm : 1160
travel mm : 4.50	+ Tolerance 1/min : +- 15
Tolerance mm : +- 0.40	†
- · · ·	+ rack travel mm : 0.50
Rated speed rpm : 700	+ Tolerance mm : + 0.50
guide sleeve	+ Rated speed rpm : 1300
travel mm : 6.50	†
Tolerance mm : + 0.20	†
	1 011 701 7
Rated speed rpm : 1025	+ LOW IDLE
guide sleeve	+
travel mm : 7.55	†
Tolerance mm : +- 0.25	+ control lever
	+ position degree : 63.0
	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	+
	+ control lever
Rated speed rpm : 1080	+ position degree : 8.0
	+ tolerance degree : +- 4.0
Rack travel in mm : 16.50	+
Tolerance mm : + 1.30	† Testing:
	+
	Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	+ rack travel mm : 4.00
	Tolerance mm : +- 0.10
Rated speed rpm : 700	+
Aneroid pressure	Rated speed rpm : 100
hPa : 1000	+
· · · · · · · · · · · · · · · · · · ·	+ CRT mm min. :> 5.40
	,

Rated speed rpm	: 300
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.15 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 12.15 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm	: 500
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 425 : 2.85 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 75 : 0.25 : + 0.05
FUEL DELIVERY CHAI	RACTERISTICS
Aneroid pressure nPa Rated speed rpm Del. quantity	: - : 700
cm3/1000 strokes Tolerance	: 147.0
cm3/1000 strokes Check tolerance cm3/1000s.	: + 1.0 : + 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 11.10 : 1090 : ← 5

STARTING FUEL DEL			
Rated speed rpm	:		100
rack travel mm	:		20.50
Tolerance mm Del. quantity	•	Ψ-	0.50
cm3/1000 strokes	:		270.0
Tolerance cm3/1000 strokes			20.0
Check tolerance	•	Ψ-	20.0
cm3/1000s.	:	+-	24.0
LOW IDLE			······································
)el quentity			
Del. quantity cm3/1000 strokes	:		18.5
cm3/1000 strokes Folerance	•		
cm3/1000 strokes Folerance cm3/1000 strokes	•	+	18.5 2.5
cm3/1000 strokes Folerance cm3/1000 strokes Check tolerance cm3/1000s.	•	+	
cm3/1000 strokes Folerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	•	+ +	2.5
cm3/1000 strokes Folerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Folerance	•	+-	2.5
cm3/1000 strokes Folerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	•	+- +-	2.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 460AA

Injection bumb

Pump designation : PES6P120A720LS7114

: -13

EP type number : 0 412 726 867

Governor

Governer design. : RQ300/1050PA911-3 Governer no. : 9 420 080 314

Cust. part No. :

Customer-spec. information Customer : MBB : 0M447 LA Motor Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : + 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 : **←** 1.50 Tolerance mm

: 6-2-4-1-5-Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 12.40

Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 195.5

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

: +- 4.0 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes : 5.0	Tolerance mm : +- 0.80
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 600 Aneroid pressure hPa : 1050
Rack travel in mm: 6.00 Tolerance mm: + 0.20	Del. quantity cm3/1000 strokes : 195.5
Del. quantity + cm3/1000 strokes : 13.5 + Tolerance +	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : + 3.0 + Check tolerance	cm3/1000s. : +- 4.0 Spreed
cm3/1000s. : +- 6.0 +	Tolerance cm3/1000 strokes : 5.0
Tolerance + cm3/1000 strokes : 8.0 + Check tolerance +	Check tolerance cm3/1000s. : 9.0
cm3/1000s. : 12.0	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER control lever position degree : 40.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0 control lever
Rated speed rpm : 300 guide sleeve travel mm : 2.95	position degree : 101.0 tolerance degree : +- 4.0
Tolerance mm : + 0.15 + Rated speed rpm : 1100 +	RATED SPEED rack travel mm : 11.30
Rated speed rpm : 1100 + guide sleeve + travel mm : 6.70 + Tolerance mm : + 0.20 + travel mm + 0.20	rack travel mm : 11.30 Rated speed rpm : 1103 Tolerance 1/min : + 8
Rated speed rpm : 600	rack travel mm : 4.00 Rated speed rpm : 1165 Tolerance 1/min : +- 15
guide sleeve + travel mm : 6.00 + Tolerance mm : + 0.10	rack travel mm : 0.75
Rated speed rpm : 1000	Tolerance mm : +- 0.75 Rated speed rpm : 1300
travel mm : 6.40 Tolerance mm : +- 0.10	
Rated speed rpm : 1175 + guide sleeve +	LOW IDLE
travel mm : 9.75 Tolerance mm : + 0.25	<pre>control lever position degree : 74.0 tolerance degree : +- 4.0</pre>
GUIDE SLEEVE POSITION	control lever position degree : 11.0
Rated speed rpm : 600	tolerance degree : +- 4.0
Rack travel in mm : 20.00	Testing:

		+ Rated speed rpm : 1050
Rated speed rpm rack travel mm	: 300 : 6,00	Del. quantity cm3/1000 strokes : 195.0
Tolerance mm		+ Tolerance
manda dansant ma	. 2.00	+ cm3/1000 strokes : +- 2.0
rack travel mm Rated speed rpm		+ Check tolerance + cm3/1000s. : +- 5.0
Tolerance 1/min		+ Spreed
	400	Tolerance
Rated speed rpm	: 100	+ cm3/1000 strokes : 8.0 + Check tolerance
CRT mm min.	: > 9.00	+ cm3/1000s. : 12.0
		+
TODOUE CONTROL		Aneroid pressure
TORQUE CONTROL		+ hPa : 1200 + Rated speed rpm : 750
Rated speed rpm	: 600	+ Del. quantity
rack travel mm	: 12.40	+ cm3/1000 strokes : 198.5
Tolerance mm	: + 0.10	Tolerance
Rated speed rpm	: 1050	+ cm3/1000 strokes : +- 2.0 + Check tolerance
rack travel mm	: 12.40	= cm3/1000s. : + 5.0
rack travel mm Tolerance mm	: + 0.10	Spreed
		+ Tolerance
Rated speed rpm rack travel mm	: 75U · 12 //n	+ cm3/1000 strokes : 8.0 + Check tolerance
Tolerance mm		- cm3/1000s. : 12.0
	_ · · · <u>-</u>	+
ALIMON		Aneroid pressure
ANEROID/ALTITUDE COMPENSATOR TEST		+ hPa : - + Rated speed rpm : 500
COMPENSATUR TEST		+ Del. quantity
		cm3/1000 strokes : 126.0
		Tolerance
MEASUREMENT		+ cm3/1000 strokes : + 1.0 + Check tolerance
Pressure hPa	: 300	+ theck tolerance + cm3/1000s. : +- 4.0
rack travel mm	: -1.80	Spreed
Tolerance mm		+ Tolerance
December 40-	. /00	cm3/1000 strokes : 5.0
Pressure hPa rack travel mm		+ Check tolerance + cm3/1000s. : 9.0
Tolerance mm	: +- 0.10	+
		DDD WALLAND
START CUT-OUT		BREAKAWAY
OTANI COL COL		4
Rated speed rpm	: > 100	Rack travel in mm: 11.30
Rated speed rpm	: < 220	+ Rated speed rpm : 1103
Check		+ Tolerance 1/min : +- 8
speed 1/min	: > 80	+
Check		
speed 1/min	: < 240	+ STARTING FUEL DELIVERY
		Rated speed rpm : 100
FUEL DELIVERY CHA	RACTERISTICS	+ Del. quantity
		+ cm3/1000 strokes : 230.0
Aneroid pressure	. 4200	+ Tolerance
hPa	: 1200	+ cm3/1000 strokes : +- 10.0

B03

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm 300 rack travel mm 6.00 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 13.5 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 463

Injection pump

Pump designation : PES6P120A320/3RS3264

EP type number : 9 400 087 075

Governor

Governer design. : RQV350...1100PA973

: -1

Governer no. : 9 420 080 317

Cust. part No. :

Customer—spec. information Customer : CUMMINS

Motor : 6 CTAA - 8.3 L

Power KW : 186.4

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.50 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.55 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 174.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes :

5.0

Check tolerance

cm3/1000s. : 9.0

805

	1	Spreed	
Del. quantity	\mathbf{I}	Tolerance	
cm3/1000 strokes :	9.5	cm3/1000 strokes	5.0
Tolerance	1	Check tolerance	
cm3/1000 strokes : +-	3.0	cm3/1000s.	: 9.0
Check tolerance	1		, , ,
cm3/1000s. : +-	6.0		
Spreed	1		
Tolerance	1	CONTROL LEVER	
cm3/1000 strokes :	8.0		
Check tolerance	1	control lever	
cm3/1000s. :	12.0	position degree	: 55.0
	1	tolerance degree	
	+	_	
(B) SETTING OF INJECTION) PUMP +	control lever	
WITH GOVERNOR	+	position degree	
	+	tolerance degree	: +- 4.0
GUIDE SLEEVE TRAVEL	‡	RATED SPEED	
Data damanda sian a 44	+	made Amarial	. 0.50
Rated speed rpm : 11	†	rack travel mm	
guide sleeve	7.05	Rated speed rpm Tolerance 1/min	
travel mm : +-	7.05	roterance (/min	· — 3
roterance mm : +-	I	rack travel mm	: 4.00
Rated speed rpm : 14	inn I	Rated speed rpm	: 1320
guide sleeve	I	Tolerance 1/min	
	9.00 I	TOTAL BLUE TABLET	• • 12
Tolerance mm : +-		rack travel mm	: 0.50
TOTAL COMMITTEE	I	Tolerance mm	
Rated speed rpm : 3	350 I	Rated speed rpm	
guide sleeve	I	nacea speed i pili	. 1566
	1.60		
Tolerance mm : +	0.20	· · · · · · · · · · · · · · · · · · ·	
Total differ limit	1	LOW IDLE	
Rated speed rpm : 6	50		
guide sleeve	1		
	4.50	control lever	
Tolerance mm : +-		position degree	: 70.0
The second secon	1	tolerance degree	
		2222, 21,00 303,00	
GUIDE SLEEVE POSITION	+	control lever	
	1	position degree	
Rated speed rpm : 13	25	tolerance degree	
	+		
Rack travel in mm: 1		Testing:	
Tolerance mm : +-	1.30	Dakad amazd	. 750
	†	Rated speed rpm	
FIRE 1 045 SELTUES AT EL	LL LOAD STOP	rack travel mm	
FULL LOAD DELIVERY AT FU	LL LUAD STOP	Tolerance mm	: + 0.10
Rated speed rpm : 11	nn I	Rated speed rpm	: 100
Aneroid pressure	1	nacca opeca (pill	
hPa : 10	00 1	CRT mm min.	: > 8.00
Del. quantity	1	· · · · · · · · · · · · · · · · · · ·	·
cm3/1000 strokes : 1	74.0	Rated speed rpm	: 500
Tolerance	+	, ,	
cm3/1000 strokes : +-	1.0		
Check tolerance	+	TORQUE CONTROL	
cm3/1000s. : +-	4.0		

B06

Rated speed rpm	: 1100	+ Tolerance
rack travel mm		+ cm3/1000 strokes : 6.0
Tolerance mm	: +- 0.05	+ Check tolerance
		+ cm3/1000s. : 12.0
Rated speed rpm	: 700	+
rack travel mm		+ Aneroid pressure
Tolerance mm	: + 0.05	+ hPa : -
		+ Rated speed rpm : 500
ANEROID/ALTITUDE		+ cm3/1000 strokes : 121.0
COMPENSATOR TEST		+ Tolerance
		+ cm3/1000 strokes : +- 1.0
SETTING		+ Check tolerance
SETTING		+ cm3/1000s. : +- 4.0
Destant award www	. 500	†
Rated speed rpm	: 500 : 1000	DDEALANA
Pressure hPa rack travel mm	: 10.55	+ BREAKAWAY
Tolerance mm		Ť
roterance min	, +- 0.05	Rack travel in mm : 9.50
MEASUREMENT		Rated speed rpm : 1165
MEASUREMENT		Tolerance 1/min : + 5
Pressure hPa	•	T rocer dice 17 milli
Rated speed rpm	500	1
nated opeca i piii	. 500	
Rated speed rpm	: 500	+ STARTING FUEL DELIVERY
Marca opeca i piii	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OWNITED TOLL SCRIPTION
Pressure hPa	: 740	+ Rated speed rpm : 100
rack travel mm	1.10	+ rack travel mm : 20.00
Tolerance mm	: +- 0.10	+ Tolerance mm : +- 1.00
TO COT GITTE THAT	, , , , , , , , , , , , , , , , , , , ,	+ Del. quantity
Pressure hPa	550	+ cm3/1000 strokes : 275.0
rack travel mm	0.35	+ Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : +- 15.0
		- Check tolerance
·		+ cm3/1000s. : +- 19.0
START CUT-OUT		+
		+
Rated speed rpm	: > 100	+
Rated speed rpm	: < 290	+
		+ LOW IDLE
Check		+
speed 1/min	: > 80	+ Del. quantity
Check		+ cm3/1000 strokes : 9.5
speed 1/min	: < 310	+ Tolerance
		+ cm3/1000 strokes : +- 3.0
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000s. : $+$ 6.0
		+ Spreed
Aneroid pressure	4000	+ Tolerance
hPa	: 1000	+ cm3/1000 strokes : 8.0
Rated speed rpm	: 700	+ Check tolerance
Del. quantity	. 4/0.0	† cm3/1000s. : 12.0
cm3/1000 strokes	: 169.0	†
Tolerance		†
cm3/1000 strokes	: +- 2.0	†
Check tolerance		†
cm3/1000s.	: +- 5.5	Ť
Spreed		I
		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 473

Injection pump

Pump designation : PE6P120A320RS3178-1

EP type number : 0 411 826 764

Governor

Governer design. : RQV250...950PA921

: -13

Governer no. : D 421 813 796

Cust. part No. : 478162P04

Customer-spec. information

Customer : VOLVO-TRUCK

: TD 122 FK, FR Motor

: 287.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 046

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

208.5 bar Tolerance bar : **←** 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 3.65 : +- 0.05Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

700 Rated speed rpm :

Rack travel in mm: 14.25 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 9.0

B09

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 2.5 : ← 5.5	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER	
GUIDE SLEEVE TRAV	EL	position degree tolerance degree	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 250 : 1.20 : + 0.20	control lever position degree tolerance degree	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 985 : 8.30 : + 0.10	RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 3.90 : + 0.30	rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	: 1085
Rated speed rpm guide sleeve travel mm Tolerance mm	: 700 : 6.50 : +- 0.10	Tolerance mm Rated speed rpm	
Rated speed rpm guide sleeve travel mm	: 1060 : 9.80	LOW IDLE	
Tolerance mm	: +- 0.20	control lever position degree tolerance degree	: 65.0 : + 4.0
GUIDE SLEEVE POSI		t control lever	
Rated speed rpm		<pre>position degree tolerance degree</pre>	
Rack travel in mm Tolerance mm		Testing:	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	: 250 : 4.95 : + 0.15
Rated speed rpm Aneroid pressure hPa	: 700 : 1200	Rated speed rpm	
		T Citt ush milli-	0.50

Pated speed now	: 315		
Rated speed rpm	. 313		
TORQUE CONTROL			
Rated speed rpm rack travel mm Tolerance mm	: 700 : 14.25 : +- 0.05		
ANEROID/ALTITUDE COMPENSATOR TEST			
SETTING			
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 14.25 : + 0.05		
MEASUREMENT			
Pressure hPa Rated speed rpm	: - : 500		
Rated speed rpm	: 500		
Pressure hPa rack travel mm Tolerance mm	: 865 : 3.80 : +- 0.10		
Pressure hPa rack travel mm Tolerance mm	: 100 : 0.25 : + 0.05		
FUEL DELIVERY CHARACTERISTICS			
Aneroid pressure hPa	: -		
Rated speed rpm Del. quantity	: 700		
cm3/1000 strokes	: 164.0		
Tolerance cm3/1000 strokes	: +- 1.0		
Check tolerance cm3/1000s.	: +- 4.0		

STARTING FUEL DELIVERY

Rated speed rpm rack travel mm Tolerance mm	: : +-	100 20.50 0.50
Del. quantity cm3/1000 strokes Tolerance	:	290.0
cm3/1000 strokes Check tolerance	: +-	20.0
cm3/1000s.	: +-	24.0

LOW IDLE

Del. quantity cm3/1000 strokes	:	20.0	
Tolerance cm3/1000 strokes Check tolerance	: +-	2.5	
cm3/1000s. Spreed	: +-	5.5	
Tolerance cm3/1000 strokes Check tolerance	:	5.0	
cm3/1000s.	:	7.0	

End of test specification sheet

BREAKAWAY

Rack travel in mm : 13.20
Rated speed rpm : 995
Tolerance 1/min : +- 5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 15.04.96 Edition : ISO 4113 Test oil Combination No. : 9 400 087 475 Injection pump Pump designation : PES5P120A720LS7280 EP type number : 9 400 087 087 Governor Governer design. : RQV300...950PA1029 : -6 : 9 420 080 360 Governer no. Cust. part No. : 0240742602 Customer-spec. information Customer : MBB Motor : OM 449 LA Power KW : 220.6 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C Tolerance °C 2.0 Overflow valve : 1 417 413 025 Inlet press. bar : 1.5 Test nozzle holde : 1 688 901 105 assembly Opening pressure 208.5 bar : **←** 1.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000 REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____ BEGINNING OF DELIVERY Test pressure bar : Tolerance bar : + 1.0 Prestroke mm : 4.65 : +- 0.05 Tolerance mm Check tolerance mm : ← 0.10 Rack travel in mm: 21.00 Firing order : 1-3-5-4-2 : 0-72-144-216-288 Phasing BASIC SETTING Rated speed rpm : 700 13.45 Rack travel in mm : : +- 0.05 Tolerance mm Del. quantity cm3/1000 strokes : 245.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +-4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. 9.0 Del. quantity cm3/1000 strokes : 12.0

Tolerance +	Check tolerance
cm3/1000 strokes : + 3.0	cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 6.0	Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance	Check tolerance
cm3/1000 strokes : 8.0 +	cm3/1000s. : 9.0
Check tolerance +	
cm3/1000s. : 12.0 +	
+	
+	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	control lever
1	position degree : 52.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	
T	control lever
Rated speed rpm : 1050	position degree : 117.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 7.80	DATE OF THE
Tolerance mm : + 0.10 +	RATED SPEED
Rated speed rpm : 700 +	rack travel mm : 12.50
guide sleeve	Rated speed rpm : 985
travel mm : 5.45	Tolerance 1/min : +- 5
Tolerance mm : + 0.25	
1	rack travel mm : 4.00
Rated speed rpm : 300	Rated speed rpm : 1125
guide sleeve	Tolerance 1/min : + 15
travel mm : 0.75	rocci dilec in milita i i i i i i i
Tolerance mm : +- 0.25	rack travel mm : 0.50
Toterance min : + 0.25	
700	
Rated speed rpm : 500	Rated speed rpm : 1250
guide sleeve	
travel mm : 3.45	
Tolerance mm : + 0.25	
+	LOW IDLE
Rated speed rpm : 1165	
guide sleeve	
travel mm : 9.45	control lever
Tolerance mm : + 0.25	position degree : 83.0
	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	control lever
1	position degree : 18.0
Rated speed rpm : 1120	tolerance degree : +- 4.0
rated speed thin . Iteo	toter ance degree 4.5
Book troval in mm : 14 50	Tosting
Rack travel in mm: 16.50 + Tolerance mm: + 1.30 +	Testing:
Tolerance mm : +- 1.50 +	- · · · ·
+	Rated speed rpm : 300
+	rack travel mm : 5.30
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 300 rack travel mm : 5.30 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 5.30 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700	rack travel mm : 5.30
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700 Aneroid pressure	rack travel mm : 5.30 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700	rack travel mm : 5.30 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700 Aneroid pressure hPa : 1300	rack travel mm : 5.30 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700 Aneroid pressure hPa : 1300 Del. quantity	rack travel mm : 5.30 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 9.00
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700 Aneroid pressure hPa : 1300 Del. quantity cm3/1000 strokes : 245.0	rack travel mm : 5.30 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700 Aneroid pressure hPa : 1300 Del. quantity	rack travel mm : 5.30 Tolerance mm : + 0.10 Rated speed rpm : 100 CRT mm min. :> 9.00

		+ Check tolerance
TORQUE CONTROL		- + cm3/1000s. : +- 5.0 - Spreed
Rated speed rpm rack travel mm	: 13.45	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Tolerance mm		+
Rated speed rpm rack travel mm Tolerance mm	: 13.45	Aneroid pressure hPa : - Rated speed rpm : 500
rocerance min	; +- 0.03	+ Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes : 121.0 Tolerance cm3/1000 strokes : +- 1.0
COMPENSATOR TEST		Check tolerance cm3/1000s. : +- 4.0
SETTING		Spreed Tolerance
Rated speed rpm Pressure hPa		cm3/1000 strokes : 5.0 Check tolerance
rack travel mm Tolerance mm	: 13.45	cm3/1000s. : 9.0
MEASUREMENT		BREAKAWAY
Pressure hPa	: -	†
Rated speed rpm		+ Rack travel in mm : 12.50 + Rated speed rpm : 985
Rated speed rpm	: 500	+ Tolerance 1/min : + 5
Pressure hPa rack travel mm	: 600° : 2.45	‡
Tolerance mm	: + 0.15	STARTING FUEL DELIVERY
Pressure hPa rack travel mm	: 400 : 1.10	Rated speed rpm : 100 Del. quantity
Tolerance mm		cm3/1000 strokes : 220.0 Tolerance
START CUT-OUT		cm3/1000 strokes : +- 10.0 Check tolerance
	. > 100	cm3/1000s. : +- 14.0
Rated speed rpm Rated speed rpm		<u> </u>
Check speed 1/min	: > 80	LOW IDLE
Check speed 1/min	: < 240	+ Del. quantity
speed //m///		cm3/1000 strokes : 12.0
FUEL DELIVERY CHA	ARACTERISTICS	cm3/1000 strokes : + 3.0 Check tolerance
Aneroid pressure	: 1300	+ cm3/1000s. : + 6.0 + Spreed
nPa Rated speed rpm		† Tolerance
Del. quantity cm3/1000 strokes	: 241.0	+ cm3/1000 strokes : 8.0 + Check tolerance
Tolerance cm3/1000 strokes	: +- 2.0	+ cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15,04,96 Test oil : ISO 4113

Combination No. : 9 400 087 476

Injection pump

Pump designation : PES6P120A720LS7181

: -10

EP type number : 0 412 726 870

Governor

Governer design. : RQV300...1050PA1055

Governer no. : 9 420 880 337

Cust. part No. : 0190741502

Customer-spec. information

Customer : MBB

: OM447LA

Motor : 301.8

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10 Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 6-2-4-1-5-: 3

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 15.15 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 266.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s : 9.0

Del. quantity cm3/1000 strokes : 14.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	Del. quantity cm3/1000 strokes : 266.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	- CONTROL LEVER - control lever
GUIDE SLEEVE TRAVEL	- position degree : 60.0 - tolerance degree : +- 4.0
Rated speed rpm : 300 guide sleeve travel mm : 1.40 Tolerance mm : +- 0.20	control lever position degree : 115.0 tolerance degree : + 4.0
Rated speed rpm : 1100 guide sleeve travel mm : 7.65 Tolerance mm : + 0.25	- RATED SPEED - rack travel mm : 14.10 - Rated speed rpm : 1095 - Tolerance 1/min : +- 5
Rated speed rpm : 500 guide sleeve travel mm : 3.25 Tolerance mm : + 0.25	rack travel mm : 4.00 Rated speed rpm : 1195 Tolerance 1/min : + 15
Rated speed rpm : 900 guide sleeve travel mm : 5.85 Tolerance mm : + 0.25	rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300
Rated speed rpm : 1210	LOW IDLE
guide sleeve travel mm : 9.55 Tolerance mm : + 0.25	control lever position degree : 68.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	control lever
Rated speed rpm : 1140	position degree : 13.0 tolerance degree : +- 4.0
Rack travel in mm: 16.50 Tolerance mm: + 1.30	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 300 rack travel mm : 6.00 Tolerance mm : ÷- 0.10
Rated speed rpm : 1050 Aneroid pressure hPa : 1200	Rated speed rpm : 100
+	CRT mm min. :> 8.00

		+ Tolerance
Rated speed rpm	: 400	+ cm3/1000 strokes : +- 2.0 + Check tolerance
TARALIE BALIZDA		- cm3/1000s. : +- 5.0
TORQUE CONTROL		+ Aneroid pressure
Rated speed rpm		+ hPa : -
rack travel mm		Rated speed rpm : 500
Tolerance mm	: +- 0.05	+ Del. quantity + cm3/1000 strokes : 133.0
Rated speed rpm		+ Tolerance
rack travel mm Tolerance mm		+ cm3/1000 strokes : +- 1.0 + Check tolerance
roterance man	. +- 0.05	- cm3/1000s. ; +- 4.0
		Spreed
ANEROID/ALTITUDE COMPENSATOR TEST		+ Tolerance + cm3/1000 strokes : 5.0
COMPENSATOR TEST		Check tolerance
		cm3/1000s. : 9.0
SETTING		
Rated speed rpm	: 600	BREAKAWAY
Pressure hPa	: 1200	+
rack travel mm Tolerance mm		Rack travel in mm : 14.10
TOCCY GIVE THAT		Rated speed rpm : 1095
MEASUREMENT	-	Tolerance 1/min : +- 5
Pressure hPa	• -	‡
Rated speed rpm	: 600	
Datad aroad nam	: 600	STARTING FUEL DELIVERY
Rated speed rpm	: 600	Rated speed rpm : 100
Pressure hPa	: 820 -	Del. quantity
rack travel mm Tolerance mm	: 3.85 : +- 0.15	tom3/1000 strokes : 260.0 cm3/1000 strokes : 260.0
local differ limit	-	cm3/1000 strokes : + 10.0
Pressure hPa	: 500	Check tolerance
rack travel mm Tolerance mm	: 1.30 : +- 0.10	+ cm3/1000s. : + 14.0
rocer di ice imir		
OTADY OUT OUT		
START CUT-OUT	-	LOW IDLE
Rated speed rpm	: > 100	1
Rated speed rpm	: < 220 -	Del. quantity cm3/1000 strokes : 14.0
Check	- -	Tolerance
speed 1/min	: > 80	cm3/1000 strokes : + 3.0
Check speed 1/min	: < 240	Check tolerance cm3/1000S. :+- 6.0
Speed Triain	. \ 240	Spreed
		Tolerance
FUEL DELIVERY CHA	ARACTERISTICS -	cm3/1000 strokes : 8.0 Check tolerance
Aneroid pressure	1	cm3/1000s. : 12.0
hPa	: 1200	†
Rated speed rpm Del. quantity	: 700	
cm3/1000 strokes	: 269.5	-
•	•	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 483

Injection pump

Pump designation : PES5P120A720LS7280 EP type number : 9 400 087 087

Governor

Governer design. : RQV300...950PA1029

: -5

Governer no. : 9 420 080 358

Cust. part No. :

Customer-spec. information

Customer : MBB

: OM 449 LA Motor Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 2.0 Tolerance °C

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

: 1 680 750 075 Test lines

Outside diameter : 8.0 x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 4.65 Tolerance mm : +- 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 21.00

Firing order : 1-3-5-4-2

Phasing : 0-72-144-216-288

BASIC SETTING

600 Rated speed rpm

12.25 Rack travel in mm : Tolerance mm : \leftarrow 0.05

Del. quantity cm3/1000 strokes : 202.5

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s. : +--4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance 9.0 cm3/1000s.

Del. quantity

cm3/1000 strokes : 11.0

B20

Tolerance +	Check tolerance
cm3/1000 strokes : +- 3.0	cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 6.0	Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance	Check tolerance
cm3/1000 strokes : 8.0	cm3/1000s. : 9.0
Check tolerance	CM3/10005. : 9.0
cm3/1000s. : 12.0	
CM3/10003. ; 12.0 T	
T	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	CONTROL LEVER
WITH GOVERNOR	control lever
MILLI GOVERNOR	position degree : 52.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	toterance degree . +- 4.0
doing specie invade	control lever
Rated speed rpm : 1050	position degree : 117.0
guide sleeve	
travel mm : 7.80	tolerance degree : +- 4.0
	DATEN ODEEN
Tolerance mm : + 0.10 +	RATED SPEED
Dated around many : 700	nnote through the second of th
Rated speed rpm : 700	rack travel mm : 11.20
guide sleeve	Rated speed rpm : 1005
travel mm : 5.45	Tolerance 1/min : +- 5
Tolerance mm : + 0.25 +	
700	rack travel mm : 4.00
Rated speed rpm : 300	Rated speed rpm : 1115
guide sleeve	Tolerance 1/min : + 15
travel mm : 0.75	
Tolerance mm : + 0.25 +	rack travel mm : 0.50
†	Tolerance mm : + 0.50
Rated speed rpm : 500 +	Rated speed rpm : 1250
guide sleeve +	
travel mm : 3.25	
Tolerance mm : + 0.25 +	
*	LOW IDLE
Rated speed rpm : 1165	
guide sleeve	
travel mm : 9.45	control lever
Tolerance mm : + 0.25	position degree : 82.0
†	tolerance degree : +- 4.0
CUITAR OF FRIE GOOTTEAN	and the Colonia
GUIDE SLEEVE POSITION	control lever
4400	position degree : 17.0
Rated speed rpm : 1120	tolerance degree : + 4.0
T	· · •
Rack travel in mm: 16.50	Testing:
Tolerance mm : + 1.30	700
<u>†</u>	Rated speed rpm : 300 rack travel mm : 5.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
<u> </u>	~
Rated speed rpm : 600	Rated speed rpm : 100
Aneroid pressure	
hPa : 1000 +	CRT mm min. :> 8.00
Del. quantity +	
cm3/1000 strokes : 202.5	Rated speed rpm : 325
Tolerance +	
cm3/1000 strokes : +- 1.0 +	
·	

		+	Check toler nce	
TORQUE CONTROL	Auchdeide Theophia ann de Anna Martin ach ach ach ach ach	<u> </u>	cm3/1000s. Spreed Tolerance	: +- 5.0
Rated speed rpm rack travel mm		<u> </u>	cm3/1000 strokes Check tolerance	: 8.0
Tolerance mm		‡	cm3/1000s.	: 12.0
Rated speed rpm rack travel mm	: 950 : 12.25	<u> </u>	Aneroid pressure hPa	: -
rack travel mm Tolerance mm	: +- 0.05	+	Rated speed rpm Del. quantity	
ANEROID/ALTITUDE		+	cm3/1000 strokes Tolerance	
COMPENSATOR TEST		‡	cm3/1000 strokes Check tolerance	
SETTING		$\frac{1}{1}$	cm3/1000s. Spreed Tolerance	: +- 4.0
Rated speed rpm Pressure hPa		<u> </u>	cm3/1000 strokes Check tolerance	: 5.0
rack travel mm Tolerance mm		+	cm3/1000s.	: 9.0
MEASUREMENT		†	BREAKAWAY	
Pressure hPa Rated speed rpm	: - : 500	Ī	Rack travel in mm Rated speed rpm	
Rated speed rpm	: 500	$\prod_{i=1}^{n}$	Tolerance 1/min	
Pressure hPa rack travel mm Tolerance mm	: 600 : 2.00 : + 0.10	+	STARTING FUEL DEL	IVERY
Pressure hPa	: 360	+	Rated speed rpm	
rack travel mm Tolerance mm	: 0.55 : + 0.05	‡	Del. quantity cm3/1000 strokes Tolerance	: 250.0
START CUT-OUT	<u></u>		cm3/1000 strokes Check tolerance	: + 10.0
Rated speed rpm	: > 100	+	cm3/1000s.	: + 14.0
Rated speed rpm	: < 220	+		
Check speed 1/min Check	: > 80	‡	LOW IDLE	
speed 1/min	: < 240	+	Del. quantity cm3/1000 strokes	: 11.0
FUEL DELIVERY CHA	ARACTERISTICS	+	Tolerance cm3/1000 strokes	: ← 3.0
Aneroid pressure	: 1000	+	Check tolerance cm3/1000s. Spreed	: +- 6.0
Rated speed rpm Del. quantity		+	Tolerance cm3/1000 strokes	: 8.0
cm3/1000 strokes Tolerance	: 206.0	+	Check tolerance cm3/1000s.	: 12.0
cm3/1000 strokes	: +- 2.0	+		- '

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 485

Injection pump

Pump designation : PES5P120A720LS7280

EP type number : 9 400 087 087

Governor

Governer design. : RQV300...950PA1029

: -7

: 9 420 080 363 Governer no.

Cust. part No.

Customer-spec. information Customer : MBB

: OM 449 LA Motor

Power KW : 220.7

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 047

2.0 Inlet press. bar :

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : **←** 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0 x inside diameter : 3.0 : 1000 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar 1.0 : +--

Prestroke mm 4.65 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 21.00

Firing order : 1-3-5-4-2

: 0-72-144-216-288 Phasing

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.75 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 263.5

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance cm3/1000s.

4.0

Spreed

Tolerance

cm3/1000 strokes :

5.0

9.0

Check tolerance

cm3/1000s.

Del. quantity

cm3/1000 strokes : 17.0

B24

Tolerance +	Check tolerance
cm3/1000 strokes : +- 3.0 +	cm3/1000s. : +- 4.0
Check tolerance	Spreed
$cm3/1000s$, : \leftarrow 6.0	Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance	Check tolerance
cm3/1000 strokes : 8.0	cm3/1000s. : 9.0
Check tolerance	· · · · · · · · · · · · · · · · · · ·
cm3/1000s. : 12.0 +	
<u></u>	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	Odiffice Ectell
WITH GOVERNOR	control lever
12.11	position degree : 52.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	Total and dog. do 1
	control lever
Rated speed rpm : 1050	position degree : 117.0
guide steeve	tolerance degree : +- 4.0
travel mm : 7.80	total and acgives it is the
Tolerance mm : + 0.10	RATED SPEED
Total district limity	MATER OF EED
Rated speed rpm : 700	rack travel mm : 12.70
guide sleeve	Rated speed rpm : 995
travel mm : 5.45	Tolerance 1/min : + 5
Tolerance mm : + 0.25	roceratice many
Total direct like	rack travel mm : 4.00
Rated speed rpm : 300	Rated speed rpm : 1125
guide sleeve	Tolerance 1/min : + 15
travel mm : 0.75	roceratice minit 15
Tolerance mm : + 0.25	rack travel mm : 0.50
	Tolerance mm : + 0.50
Rated speed rpm : 500	Rated speed rpm : 1250
guide sleeve	haced speed this . 1250
travel mm : 3.55	
Tolerance mm : + 0.25	
	LOW IDLE
Rated speed rpm : 1165	LOW IDEC
guide steeve	
travel mm : 9.45	control lever
Tolerance mm : + 0.25	position degree : 83.0
	tolerance degree : +- 4.0
	toter arice degree 4.0
GUIDE SLEEVE POSITION	control lever
GOIDE OCCUVE (OOI (IO))	position degree : 18.0
Rated speed rpm : 1120	tolerance degree : + 4.0
raced speed (piii : 1125	total differ degree 4.0
Rack travel in mm: 16.50	Testing:
Tolerance mm : + 1.30	resering.
roceratice that	Rated speed rpm : 300
	rack travel mm : 5.30
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
TOLL LOAD DELIVERY AT TOLL LOAD STOT	roter arice likit
Rated speed rpm : 700	Rated speed rpm : 100
Aneroid pressure	nacca speca i più i l'ou
hPa : 1300	CRT mm min. :> 9.00
Del. quantity	Contract 12 2 200
cm3/1000 strokes : 263.5	Rated speed rpm : 325
Tolerance	nacea speed (pm . Je)
cm3/1000 strokes : + 1.0	

		Check tolerance cm3/1000s. : +- 5.0
TORQUE CONTROL	<u> </u>	Spreed Tolerance
Rated speed rpm : rack travel mm :	700 13.75	cm3/1000 strokes : 8.0 Check tolerance
	+ 0.05	cm3/1000s. : 12.0
Rated speed rpm : rack travel mm :	950 13.75	Aneroid pressure hPa : -
Tolerance mm :	+- 0.05 +-	Rated speed rpm : 500 Del. quantity
ANEROID/ALTITUDE		cm3/1000 strokes : 121.0 Tolerance
COMPENSATOR TEST	Ī	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
SETTING	\pm	Spreed Tolerance
Rated speed rpm : Pressure hPa :	500 1300	cm3/1000 strokes : 5.0 Check tolerance
rack travel mm :	13.75 ← 0.05	cm3/1000s. : 9.0
MEASUREMENT	‡	BREAKAWAY
Pressure hPa : Rated speed rpm :	500	Rack travel in mm: 12.70
Rated speed rpm :	500	Rated speed rpm : 995 Tolerance 1/min : +- 5
Pressure hPa : rack travel mm :	800 2.85	
	← 0.15	STARTING FUEL DELIVERY
Pressure hPa : rack travel mm :	0.90	Rated speed rpm : 100 Del. quantity
Tolerance mm : -	← 0.10 +	cm3/1000 strokes : 250.0 Tolerance
START CUT-OUT	<u> </u>	cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0
Rated speed rpm : ? Rated speed rpm : <		
Check speed 1/min : > Check	> 80 ‡	LOW IDLE
speed 1/min : <	< 240	Del. quantity cm3/1000 strokes : 17.0
FUEL DELIVERY CHARACT	TERISTICS	Tolerance cm3/1000 strokes : + 3.0
Aneroid pressure	1300	Check tolerance cm3/1000s. : +- 6.0 Spreed
Rated speed rpm : Del. quantity	950	Tolerance cm3/1000 strokes : 8.0
cm3/1000 strokes : Tolerance	256.0	Check tolerance cm3/1000s. : 12.0
cm3/1000 strokes : +	- 2.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15,04,96 Edition Test oil : ISO 4113

Combination No. : 9 400 087 486

Injection pump

Pump designation : PES5P120A720LS7329 EP type number : 9 400 087 088

Governor

Governer design. : RQV300...1050PA1055

Governer no. : 9 420 080 337

Cust. part No. : 4750747002

Customer-spec. information Customer : MBB Motor : OM449LA Power KW : 220.8

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 5.05 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-3-5-4-2

: 0-72-144-216-288 Phasing

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 15.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 266.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed

Tolerance

cm3/1000 strokes :

5.0

Check tolerance

9.0 cm3/1000s.

Del. quantity	+ Tolerance
cm3/1000 strokes : 14.0	+ cm3/1000 strokes : +- 1.0
Tolerance	Check tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000s. : +- 4.0
	•
Check tolerance	† Spreed
cm3/1000s. : +- 6.0	+ Tolerance
Spreed	+ cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : 9.0
Check tolerance	+
cm3/1000s. : 12.0	1
	CONTROL LEVER
(D) CETTAIC OF TALLECTION DUMD	T CONTROL LEVER
(B) SETTING OF INJECTION PUMP	T
WITH GOVERNOR	control lever
•	+ position degree : 60.0
	+ tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	+
	+ control lever
Rated speed rpm : 300	position degree : 115.0
guide steeve	tolerance degree : + 4.0
travel mm : 1.40	
	RATED SPEED
Tolerance mm : +- 0.20	T RATED SPEED
4400	T
Rated speed rpm : 1100	rack travel mm : 14.10
guide sleeve	+ Rated speed rpm : 1095
travel mm : 7.65	+ Tolerance 1/min : +- 5
Tolerance mm : + 0.25	
	rack travel mm : 4.00
Rated speed rpm : 500	Rated speed rpm : 1195
· · · · · · · · · · · · · · · · · · ·	Tolerance 1/min : +- 15
guide sleeve	Toterance Dain : The 13
travel mm : 3.25	†
Tolerance mm : + 0.25	rack travel mm : 0.75
•	+ Tolerance mm : +- 0.75
Rated speed rpm : 900	Rated speed rpm : 1300
guide sleeve -	+
travel mm : 5.85 -	1
Tolerance mm : + 0.25	
, and a second s	LOW IDLE
Rated speed rpm : 1210	1000
	T
guide sleeve -	
travel mm : 9.55	control lever
Tolerance mm : +- 0.25	position degree : 68.0
-	tolerance degree : +- 4.0
	+
GUIDE SLEEVE POSITION -	control lever
•	position degree : 13.0
Rated speed rpm : 1140	tolerance degree : +- 4.0
Matta opeta i piii i i i i i	L
Rack travel in mm: 16.50	Testing:
	resting.
Tolerance mm : + 1.30	Detect owned and 700
7	Rated speed rpm : 300
	rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
-	
Rated speed rpm : 1050	Rated speed rpm : 100
Aneroid pressure	
hPa : 1200	CRT mm min. :> 8.00
Del. quantity	
	Rated speed rpm : 400
cm3/1000 strokes : 266.0	L varen sheen thus . 400

		+ Check tolerance
TORQUE CONTROL		+ cm3/1000s. : +- 5.0
Rated speed rpm	: 1050	+ Aneroid pressure + hPa : -
rack travel mm	: 15.15	+ Rated speed rpm : 500
Tolerance mm	: +- 0.05	+ Del. quantity + cm3/1000 strokes : 133.0
Rated speed rpm	: 700	+ Tolerance
rack travel mm Tolerance mm	: 15.15 : +- 0.05	+ cm3/1000 strokes : + 1.0 + Check tolerance
TO CC TO TO THE	0.05	+ cm3/1000s. : +- 4.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ cm3/1000 strokes : 5.0
		+ Check tolerance + cm3/1000s. : 9.0
SETTING		T (113) (1003)
Rated speed rpm	: 600	BREAKAWAY
Pressure hPa	: 1200	†
rack travel mm Tolerance mm	: 15.15 : +- 0.05	Rack travel in mm : 14.10
	- -	+ Rated speed rpm : 1095
MEASUREMENT		+ Tolerance 1/min : +- 5
Pressure hPa	: -	+
Rated speed rpm	: 600	+ STARTING FUEL DELIVERY
Rated speed rpm	: 600	+
Pressure hPa	: 820	+ Rated speed rpm : 100 + Del. quantity
rack travel mm	3.85	cm3/1000 strokes : 260.0
Tolerance mm	: +- 0.15	+ Tolerance + cm3/1000 strokes : + 10.0
Pressure hPa	: 500	+ Check tolerance
rack travel mm	: 1.30	- cm3/1000s. : +- 14.0
Tolerance mm	: +- 0.10	‡
START CUT-OUT		
era board pare	: > 100	LOW IDLE
Rated speed rpm Rated speed rpm	: < 220	T Del. quantity
·		+ cm3/1000 strokes : 14.0
Check speed 1/min	: > 80	+ Tolerance + cm3/1000 strokes : +- 3.0
heck		+ Check tolerance
speed 1/min	: < 240	+ cm3/1000s. : + 6.0 + Spreed
FUEL DELIVERY CHA	RACTERISTICS	
	·//O #I/TO TOO	+ Check tolerance
Ineroid pressure	: 1200	+ cm3/1000s. : 12.0
Pa Nated speed rpm	: 700	Ī
el. quantity		+
m3/1000 strokes olerance	: 269.5	<u> </u>
m3/1000 strokes	: 2.0	1



Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.04.96 Edition : JSO 4113 Test oil

Combination No. : 9 400 087 488

Injection pump

Pump designation : PES6P120A720RS3338 EP type number : 9 400 087 089

Governor

Governer design. : RQV350...1150PA923

: -7K

: 9 420 080 370 Governer no.

Cust. part No. :

Customer-spec. information : YULIN Customer : FNH 7.8L Motor Power KW : 179.0

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

208.5 Tolerance bar : **←** 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : + 1.0

Prestroke mm 2.40 : + 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 13.65 : **←** 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 166.0

Tolerance cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s.

; +--4.0

Spreed Tolerance

cm3/1000 strokes :

5.0

Check tolerance

9.0 cm3/1000s.

CO4

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	+	Check tolerance cm3/1000s. : 9.0
Check tolerance	: *- 3.0 I	CONTROL LEVER
cm3/1000s.	: ← 5.0 ↓	COMMITTEE CEACITY
Spreed	+	control lever
Tolerance	 	position degree : 68.0
cm3/1000 strokes	: 5.0	tolerance degree : +- 4.0
Check tolerance	†	
cm3/1000s.	: 8.0	control lever
	I	position degree : 118.0 tolerance degree : +- 4.0
(B) SETTING OF I	NJECTION PUMP \perp	toter arice degree 4.5
WITH GOVERNOR	+	RATED SPEED
	+	
	+	rack travel mm : 12.60
GUIDE SLEEVE TRAN	/EL +	Rated speed rpm : 1215
Data damanda	: 1200	Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	: 1200	rack travel mm : 4.00
travel mm	: 9.60	Rated speed rpm : 1350
Tolerance mm		Tolerance 1/min : + 15
, 5 (5) (1) (1)	+	
Rated speed rpm	: 450 	rack travel mm : 0.50
guide sleeve	+	Tolerance mm : +- 0.50
travel mm	3.90	Rated speed rpm : 1450
Tolerance mm	: +- 0.10	
Rated speed rpm	: 1000	
Timesa opean i pili	, , , , , , , , , , , , , , , , , , , ,	
auide sleeve	+	LOW IDLE
guide sleeve travel mm	: 7.90	LOW IDLE
travel mm Tolerance mm	: +- 0.10	control lever
travel mm Tolerance mm Rated speed rpm	: +- 0.10	control lever position degree : 64.0
travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.10 : 800	control lever
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: +- 0.10 : 800 : 6.60	control lever position degree : 64.0 tolerance degree : + 4.0
travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.10 : 800	<pre>control lever position degree : 64.0 tolerance degree : +- 4.0 control lever</pre>
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: +- 0.10 : 800 : 6.60 : +- 0.20	<pre>control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0</pre>
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35	<pre>control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0</pre>
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing:
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm	: +- 0.10 : 800 : 6.60 : + 0.20 : 350 : 2.35 : +- 0.15 PY AT FULL LOAD STOP : 1150	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure	: +- 0.10 : 800 : 6.60 : + 0.20 : 350 : 2.35 : +- 0.15 PY AT FULL LOAD STOP : 1150	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : + 0.10 Rated speed rpm : 275
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa	: +- 0.10 : 800 : 6.60 : + 0.20 : 350 : 2.35 : +- 0.15 PY AT FULL LOAD STOP : 1150	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : + 0.10
travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : +- 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : + 0.10 Rated speed rpm : 275
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900 : 166.0	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : +- 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900 : 166.0	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : +- 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900 : 166.0	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : +- 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90 Rated speed rpm : 425 TORQUE CONTROL
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +- 0.10 : 800 : 6.60 : + 0.20 : 350 : 2.35 : +- 0.15 EY AT FULL LOAD STOP : 1150 : 900 : 166.0 : +- 1.0	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : + 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90 Rated speed rpm : 425 TORQUE CONTROL Rated speed rpm : 1150
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900 : 166.0 : +- 1.0 : +- 4.0	control lever position degree : 64.0 tolerance degree : +- 4.0 control lever position degree : 14.0 tolerance degree : +- 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : +- 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90 Rated speed rpm : 425 TORQUE CONTROL Rated speed rpm : 1150 rack travel mm : 13.65
Travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +- 0.10 : 800 : 6.60 : +- 0.20 : 350 : 2.35 : +- 0.15 : Y AT FULL LOAD STOP : 1150 : 900 : 166.0 : +- 1.0 : +- 4.0	control lever position degree : 64.0 tolerance degree : + 4.0 control lever position degree : 14.0 tolerance degree : + 4.0 Testing: Rated speed rpm : 350 rack travel mm : 5.60 Tolerance mm : + 0.10 Rated speed rpm : 275 CRT mm min. : > 6.90 Rated speed rpm : 425 TORQUE CONTROL Rated speed rpm : 1150

Data danced and	. 750	+ Check tolerance
Rated speed rpm	: 750 : 13.30	+ cm3/1000s. : +- 6.0
rack travel mm Tolerance mm	: 12.20 : + 0.10	+ Spreed
locerance mm	: +- 0.10	Tolerance : 8.0
Datad annut ann		Check tolerance
Rated speed rpm	. 220	
rack travel mm Tolerance mm	11.20	+ cm3/1000s. : 12.0
iolerance mm	: - 0.20	†
		+ Aneroid pressure
		+ hPa : -
ANEROID/ALTITUDE		+ Rated speed rpm : 500
COMPENSATOR TEST		+ Del. quantity
		+ cm3/1000 strokes : 106.5
		+ Tolerance
SETTING		+ cm3/1000 strokes : +- 2.0
		+ Check tolerance
Rated speed rpm	: 1150	+ cm3/1000s. : +- 4.0
Pressure hPa	900	+
rack travel mm	: 13.65	
Pressure hPa rack travel mm Tolerance mm	: +- 0.05	+ BREAKAWAY
		+
MEASUREMENT		+
-		+ Rack travel in mm : 12.60
Pressure hPa	; -	+ Rated speed rpm : 1215
Rated speed rpm	: 1150	+ Tolerance 1/min : + 5
rack travel mm		1
Tolerance mm	: +- 0.20	<u> </u>
TOCCI GITOC TIME		
Rated speed rpm	: 1150	STARTING FUEL DELIVERY
	/ pa	100
Pressure hPa	: 635	+ Rated speed rpm : 100
rack travel mm		+ Rated speed rpm : 100 + rack travel mm : 11.00 + Tolerance mm : +- 0.40
Tolerance mm	: +- 0.20	+ Tolerance mm : +- 0.40
		+ Del. quantity
Pressure hPa		+ cm3/1000 strokes : 150.0
rack travel mm		† Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : $+$ 20.0
		+ Check tolerance
		
START CUT-OUT		+
		+
Rated speed rpm		+
Rated speed rpm	: < 290	
		+ LOW IDLE
Check		+
speed 1/min	: > 80	+ Del. quantity
Check		† cm3/1000 strokes : 29.5
speed 1/min	: < 310	+ Tolerance
		+ cm3/1000 strokes : +- 3.0
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000s. : + 5.0
		Spreed
Aneroid pressure		Tolerance
hPa	: 900	+ cm3/1000 strokes : 5.0
Rated speed rpm	: 750	+ Check tolerance
Del. quantity		+ cm3/1000s. : 8.0
cm3/1000 strokes	: 168.0	1
Tolerance		1
cm3/1000 strokes	: +- 3.0	1
CHAP TOOL SCIUNES		(

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 489

Injection pump

Pump designation : PES6P120A720RS3338

EP type number : 9 400 087 089

Governor

Governer design. : RQV350...1150PA923

: -8K

: 9 420 080 371 Governer no.

Cust. part No.

Customer-spec. information Customer : YULIN Motor : FNH 7.8L : 156.6 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 072

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 2.40 Prestroke mm Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

: + 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.55 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 159.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. 9.0

c08

Dei. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		Check tolerance cm3/1000s.	
Check tolerance cm3/1000s.	: +- 5.0	CONTROL LEVER	
Spreed Tolerance cm3/1000 strokes Check tolerance		control lever position degree tolerance degree	
cm3/1000s.	: 8.0	control lever position degree tolerance degree	
(B) SETTING OF II WITH GOVERNOR	NJECTION PUMP	RATED SPEED	
GUIDE SLEEVE TRAV	VEL	rack travel mm Rated speed rpm Tolerance 1/min	n : 1215
Rated speed rpm guide sleeve	: 1200	rack travel mm	
travel mm Tolerance mm	: 9.60 : ← 0.10	Rated speed rpr Tolerance 1/mir	n : 1350
Rated speed rpm guide sleeve travel mm	: 450 : 3.90	rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
Tolerance mm	: +- 0.10	+	
Rated speed rpm guide sleeve travel mm	: 1000 : 7.90	LOW IDLE	
Tolerance mm	: + 0.10	control lever	
Rated speed rpm guide sleeve		position degree tolerance degree	
travel mm Tolerance mm	: 6.60 : + 0.20	control lever position degree	e : 16.0
Rated speed rpm guide sleeve		tolerance degre	ee : '+- 4.0
travel mm Tolerance mm	: 2.35 : + 0.15	+ Testing:	750
FULL LOAD DELIVER	RY AT FULL LOAD STO	+ Rated speed rpm	
Rated speed rpm	: 1150	Rated speed rpm	275
Aneroid pressure hPa Del. quantity	: 900	CRT mm min.	: > 6.70
cm3/1000 strokes Tolerance	: 159.5	Rated speed rpm	: 425
cm3/1000 strokes Check tolerance		TORQUE CONTROL	
cm3/1000s. Spreed Tolerance	: +- 4.0	Rated speed rpm rack travel mm	
cm3/1000 strokes	: 5.0	+ Tolerance mm	: +- 0.05

		l Ohaali Aalamanaa
Rated speed rpm	: 750	+ Check tolerance + cm3/1000s. :+- 6.0
rack travel mm	: 12.50	Spreed
Tolerance mm		Tolerance
(OCCIDICE IN		cm3/1000 strokes : 8.0
Rated speed rpm	• 550	Check tolerance
rack travel mm	: 11 50	+ cm3/1000s. : 12.0
Tolerance mm	+ 0.20	. 12.0
rocci direc imi	0.20	Aneroid pressure
·		hPa : -
ANEROID/ALTITUDE	-9	Rated speed rpm : 500
COMPENSATOR TEST		+ Del. quantity
COLIN ENGATOR TEOT		+ cm3/1000 strokes : 108.5
		+ Tolerance
SETTING		+ cm3/1000 strokes : +- 2.0
00111110		Check tolerance
Rated speed rpm	: 1150	+ cm3/1000s. : +- 4.0
Pressure hPa	: 900	
rack travel mm		
Tolerance mm	: +- 0.05	BREAKAWAY
. TEST OF THE STREET		O CONTRACT
MEASUREMENT		1
- writerial fait!		Rack travel in mm: 12.50
Pressure hPa	: -	+ Rated speed rpm : 1215
Rated speed rpm	1150	+ Tolerance 1/min : +- 5
rack travel mm		10cordina 17 mili
Tolerance mm		\perp
OCCIDING IMI	0.20	
Rated speed rpm	: 1150	T STARTING FUEL DELIVERY
	•	1
Pressure hPa	: 500	+ Rated speed rpm : 100
rack travel mm		rack travel mm : 12.00
Tolerance mm	: + 0.20	+ Tolerance mm : + 0.40
!!#!!		+ Del. quantity
Pressure hPa	: 300	+ cm3/1000 strokes : 170.0
rack travel mm	: 10.15	+ Tolerance
Tolerance mm		- cm3/1000 strokes : + 20.0
COLONIO TERM		+ Check tolerance
		+ cm3/1000s. : +- 24.0
START CUT-OUT		T. 2710
START SOF COL		1
Rated speed rpm	: > 100	1
Rated speed rpm		
Carea chana i bill		LOW IDLE
Check		<u> </u>
speed 1/min	: > 80	<pre>→ Del. quantity</pre>
Check		+ cm3/1000 strokes : 29.5
speed 1/min	: < 310	+ Tolerance
wpogu crimin		+ cm3/1000 strokes : + 3.0
		Check tolerance
FUEL DELIVERY CHA	ARACTERISTICS	+ cm3/1000s. : +- 5.0
Punktulii VIII	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Spreed
Aneroid pressure		Tolerance
hPa	: 900	- cm3/1000 strokes : 5.0
Rated speed rpm	· 750	Check tolerance
Del. quantity	. 170	- cm3/1000s. : 8.0
cm3/1000 strokes	: 168.0	T 6000 . 0.0
	: 168.0	I
Tolerance	7 0	Ţ
cm3/1000 strokes	: ← 3.0	Ţ
		-j-

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 15.04.96 : ISO 4113 Test oil Combination No. : 9 400 087 491 Injection pump Pump designation : PE6P120A720RS3069 EP type number : 0 411 826 712 Governor Governer design. : RQV300...1000PA1164 : 9 420 080 373 Governer no. Cust. part No. Customer-spec. information Customer : IVECO ARG. Motor : IVECO 8210.22 Power KW : 224.0 TEST BENCH REQUIREMENTS Inlet line : 4.2 Test oil inlet temp. °C : + 2.0 Tolerance °C : 2 417 413 046 Overflow valve 1.5 Inlet press. bar : Test nozzle holde : 1 688 901 019 assembly Opening pressure 208.5 Tolerance bar : 1 680 750 075 Test Lines

x inside diameter x length mm	: 3.0 : 1000
REMÁRKS	
(A) INJECTION PUM Set equal delivery per values	y quant.
BEGINNING OF DELIV	VERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Check	: 3.55 : +- 0.05
	: + 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-5- 3- 6- 2- : 4
Phasing	: 0-60-120-180-240 : -300
BASIC SETTING	
Rated speed rpm	: 1000
Rack travel in mm Tolerance mm	: 12.55 : +- 0.05
Del. quantity cm3/1000 strokes	: 208.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

Outside diameter :

Del. quantity cm3/1000 strokes	: 18.0	Check tolerance cm3/1000s.	: 9.0
Tolerance	+		
cm3/1000 strokes	: +- 3.0 +		
Check tolerance	·	CONTROL LEVER	
cm3/1000s.	: +- 6.0 +		
Spreed	†	control lever	
Tolerance	<u> </u>	position degree	
cm3/1000 strokes	: 8.0	tolerance degree	: +- 4.0
Check tolerance	t		
cm3/1000s.	: 12.0	control lever	447.0
	†	position degree	
4	+	tolerance degree	: +- 4.0
(B) SETTING OF IN	JECTION PUMP +		
WITH GOVERNOR	†	RATED SPEED	
	†		
		rack travel mm	: 11.50
GUIDE SLEEVE TRAV	tL †	Rated speed rpm	
	1050	Tolerance 1/min	: +- 5
Rated speed rpm	: 1050		4 00
guide sleeve	+	rack travel mm	
travel mm	: 8.70	Rated speed rpm	
Tolerance mm	: + 0.10	Tolerance 1/min	: +- 15
	†		0.50
Rated speed rpm	: 800 +	rack travel mm	: 0.50
guide sleeve	<u> </u>	Tolerance mm	: + 0.50
travel mm	÷ 5.95 +	Rated speed rpm	: 1250
Tolerance mm	: + 0.25		
	700		
Rated speed rpm	: 300	1011 701 5	
guide sleeve	+	LOW IDLE	
guide sleeve travel mm	: 1.35	LOW IDLE	
guide sleeve	+		
guide sleeve travel mm Tolerance mm	: 1.35 : + 0.25	control lever	• 68.0
guide sleeve travel mm Tolerance mm Rated speed rpm	: 1.35 : + 0.25	control lever position degree	
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1.35 : + 0.25 : 450	control lever	
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1.35 : + 0.25 : 450 : 2.95	control lever position degree tolerance degree	
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1.35 : + 0.25 : 450	control lever position degree tolerance degree control lever	: 4.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25	control lever position degree tolerance degree control lever position degree	: + 4.0 : 13.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95	control lever position degree tolerance degree control lever	: + 4.0 : 13.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150	control lever position degree tolerance degree control lever position degree tolerance degree	: + 4.0 : 13.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05	control lever position degree tolerance degree control lever position degree	: + 4.0 : 13.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150	control lever position degree tolerance degree control lever position degree tolerance degree Testing:	: + 4.0 : 13.0 : + 4.0
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05	control lever position degree tolerance degree control lever position degree tolerance degree Testing:	: + 4.0 : 13.0 : + 4.0 : 300
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05	control lever position degree tolerance degree control lever position degree tolerance degree Testing:	: + 4.0 : 13.0 : + 4.0 : 300
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 (AT FULL LOAD STOP : 1000 : 600	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: +- 4.0 : 13.0 : +- 4.0 : 300 : 6.00 : +- 0.10 : 100 : > 8.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 Y AT FULL LOAD STOP : 1000 : 600	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10 : 100
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 YAT FULL LOAD STOP : 1000 : 600 : 208.5	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min.	: +- 4.0 : 13.0 : +- 4.0 : 300 : 6.00 : +- 0.10 : 100 : > 8.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 Y AT FULL LOAD STOP : 1000 : 600	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm	: +- 4.0 : 13.0 : +- 4.0 : 300 : 6.00 : +- 0.10 : 100 : > 8.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 (AT FULL LOAD STOP : 1000 : 600 : 208.5 : + 1.0	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min.	: +- 4.0 : 13.0 : +- 4.0 : 300 : 6.00 : +- 0.10 : 100 : > 8.00
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 YAT FULL LOAD STOP : 1000 : 600 : 208.5	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10 : 100 : > 8.00 : 375
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 (AT FULL LOAD STOP : 1000 : 600 : 208.5 : + 1.0	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10 : 100 : > 8.00 : 375 : 1000
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 (AT FULL LOAD STOP : 1000 : 600 : 208.5 : + 1.0 : + 4.0	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm	: +- 4.0 : 13.0 : +- 4.0 : 300 : 6.00 : +- 0.10 : 100 : 375 : 1000 : 12.55
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm Tolerance mm FULL LOAD DELIVERY Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1.35 : + 0.25 : 450 : 2.95 : + 0.25 : 1150 : 10.05 : + 0.25 (AT FULL LOAD STOP : 1000 : 600 : 208.5 : + 1.0 : + 4.0	control lever position degree tolerance degree control lever position degree tolerance degree Testing: Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm TORQUE CONTROL Rated speed rpm	: + 4.0 : 13.0 : + 4.0 : 300 : 6.00 : + 0.10 : 100 : > 8.00 : 375 : 1000

Rated speed rpm rack travel mm Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST	: 12.55 : + 0.05	Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 131.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
COM ENOMION TEOR		
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 12.55	Rack travel in mm: 11.50 Rated speed rpm: 1045 Tolerance 1/min: +- 5
MEASUREMENT		STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 200.0 Tolerance
Rated speed rpm	: 500	+ cm3/1000 strokes : + 10.0
Pressure hPa rack travel mm Tolerance mm	: 210 : 10.50 : ← 0.10	+ Check tolerance - cm3/1000S. : + 14.0
Pressure hPa rack travel mm Tolerance mm	: 280 : 11.75 : +- 0.05	LOW IDLE Del. quantity
START CUT-OUT		
Rated speed rpm Rated speed rpm		+ cm3/1000 strokes : +- 3.0 + Check tolerance + cm3/1000s. : +- 6.0
Check speed 1/min	: > 80	+ Spreed + Tolerance + cm3/1000 strokes : 8.0
Check		+ Check tolerance
speed 1/min	: < 240	- cm3/1000s. : 12.0
FUEL DELIVERY CH	ARACTERISTICS	
Aneroid pressure	. 400	
hPa Rated speed rpm	: 600 : 500	End of test specification sheet
Del. quantity cm3/1000 strokes	: 211.0	<u>†</u>
Tolerance cm3/1000 strokes	: + 2.0	+
Check tolerance cm3/1000s.	: +- 5.0	<u>†</u>
Aneroid pressure hPa	: -	+

C14

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 492

Injection pump

Pump designation : PES6P110A120RS7214 : 0 412 716 805 EP type number

Governor

Governer design. : RQV350...1100PA964

: -31K

: 9 420 080 374 Governer no.

Cust. part No. : 3355823

Customer-spec. information : CUMMINS Customer Motor : 6CTAA-290 Power KW : 220.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 008 Test lines

Outside diameter : 6.0

x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar :+ 1.0

4.40 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 13.95

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 186.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 4.0

Spreed

Tolerance

cm3/1000 strokes :

5.0

Check tolerance

9.0 cm3/1000s.

		+ Check tolerance	
Del. quantity		- cm3/1000s.	: 9.0
cm3/1000 strokes	43.0	1	. 7.9
Tolerance	1013	1	
cm3/1000 strokes	; +- 2.0		
Check tolerance		CONTROL LEVER	
cm3/1000s.	: +- 4.0	1	
Spreed		+ control lever	
Tolerance		+ position degree	: 116.0
cm3/1000 strokes	: 8.0	+ tolerance degree	
Check tolerance		1	
cm3/1000s.	: 12.0	+ RATED SPEED	
		1	
		→ rack travel mm	: 13.65
(B) SETTING OF IN	JECTION PUMP	Rated speed rpm	: 1150
WITH GOVERNOR		+ Tolerance 1/min	
		+	
		→ rack travel mm	
GUIDE SLEEVE TRAV	/EL	+ Rated speed rpm	: 1345
		+ Tolerance 1/min	
Rated speed rpm	: 350	+	
guide sleeve		+ rack travel mm	: 0.50
travel mm	: 1.90	+ Tolerance mm	: +- 0.50
Tolerance mm	: +- 0.10	+ Rated speed rpm	: 1500
		+	
Rated speed rpm	: 1200	+	
guide sleeve			
travel mm	: 9.10	LOW IDLE	
Tolerance mm	: + 0.10	+	
		}	
Rated speed rpm	: 450	+ control lever	
guide sleeve		position degree	: 65.0
travel mm	: 3.20	+ tolerance degree	: +- 4.0
Tolerance mm	: 0.20	+	
		+ Testing:	
Rated speed rpm	; 700	1	
guide sleeve		+ Rated speed rpm	: 300
travel mm	: 6.10	+ rack travel mm	: 6.60
Tolerance mm	: +- 0.20	+ Tolerance min	: 0.20
		}	
Rated speed rpm	: 1400	+ Rated speed rpm	: 275
guide sleeve		+	
travel mm	: 10.90	+ CRT mm min.	: > 6.50
Tolerance mm	: +- 0.20	+	
		+ Rated speed rpm	: 375
		- ‡	
FULL LOAD DELIVER	Y AT FULL LOAD STOP		
		+ TORQUE CONTROL	
Rated speed rpm	: 900	+	
Aneroid pressure		+ Rated speed rpm	: 900
hPa	: 1500	+ rack travel mm	: 13.95
Del. quantity		+ Tolerance mm	: +- 0.05
cm3/1000 strokes	: 186.0	+	
Tolerance		+ Rated speed rpm	
cm3/1000 strokes	: + 1.0	+ rack travel mm	: 14.65
Check tolerance		+ Tolerance mm	: ← 0.05
cm3/1000s.	: +- 4.0	+	
Spreed		+ Rated speed rpm	: 700
Tolerance		+ rack travel mm	: 12.90
cm3/1000 strokes	: 5.0	† Tolerance mm	: - 0.10
		-	

		+ Aneroid pressure
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ Del. quantity
		+ cm3/1000 strokes : 180.0
0577710		+ Tolerance
SETTING		+ cm3/1000 strokes : + 3.0 + Check tolerance
Rated speed rpm	: 1100	+ cm3/1000s. : + 6.0
Pressure hPa	: 1500	+
rack travel mm Tolerance mm	: 14.65	Aneroid pressure
Tolerance mm	: +- 0.05	+ hPa : -
MEASUREMENT		Rated speed rpm : 500 + Del. quantity
TEROONEREN		+ cm3/1000 strokes : 104.0
Pressure hPa	: -	+ Tolerance
Rated speed rpm	: 1100_	+ cm3/1000 strokes : +- 2.0
rack travel mm Tolerance mm	8.50	† Check tolerance
iorenance ww	: + 0.10	+ cm3/1000s. : + 4.0
Rated speed rpm	: 1100	
		BREAKAWAY
Pressure hPa		† .
rack travel mm Tolerance mm	: + 0.10	Rack travel in mm: 13.65
TO COT BUILDE AIRI	• • • • • • • • • • • • • • • • • • • •	Rated speed rpm : 1150
Pressure hPa	: 600	+ Tolerance 1/min : +- 5
rack travel mm	: 10.45	†
Tolerance mm	: ← 0.05	†
		STARTING FUEL DELIVERY
START CUT-OUT		100
Dated speed rom	> 100	Rated speed rpm : 100 rack travel mm : 11.20
Rated speed rpm Rated speed rpm	< 240	rack travel mm : 11.20 Tolerance mm : + 0.50
		+ Del. quantity
Check		+ cm3/1000 strokes : 150.0
speed 1/min	: > 80	+ Tolerance
Check speed 1/min	: < 250	+ cm3/1000 strokes : +- 20.0 + Check tolerance
speed min	. < 250	- cm3/1000s. : +- 25.0
		+
FUEL DELIVERY CHA	ARACTERISTICS	<u> </u>
Aneroid pressure		
hPa	: 1500	+ LOW IDLE
Rated speed rpm	: 1100	† hal
Del. quantity cm3/1000 strokes	: 185.0	+ Del. quantity + cm3/1000 strokes : 43.0
Tolerance	. 102.0	Tolerance 43.0
cm3/1000 strokes	: +- 3.0	+ cm3/1000 strokes : + 2.0
Check tolerance		- Check tolerance
cm3/1000s.	: +- 6.0	+ cm3/1000s. : +- 4.0
Spreed Tolerance		+ Spreed + Tolerance
cm3/1000 strokes	: 8.0	- cm3/1000 strokes : 8.0
Check tolerance		+ Check tölerance
cm3/1000s.	: 12.0	+ cm3/1000s. : 12.0
		+

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 496

Injection pump

Pump designation : PES6P120A320/3RS3264

EP type number : 9 400 087 075

Governor

Governer design. : RQV350...1100PA1206

Governer no. : 9 420 080 378

Cust. part No. : 3355762

Customer—spec. information
Customer : CUMMINS
Motor : 6CTA
Power KW : 190.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.50
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 10.85 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 186.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. :

9.0

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 6.0 : 8.0 : 12.0	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0 : 5.0
(B) SETTING OF IN WITH GOVERNOR	JECIION PUMP	control Lever	
GUIDE SLEEVE TRAV	EL	position degree tolerance degree	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1075 : 7.60 : +- 0.10	control lever position degree tolerance degree RATED SPEED	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 700 : 5.05 : + 0.25	rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 350 : 1.65 : +- 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: 1200
Rated speed rpm guide sleeve travel mm Tolerance mm	: 500 : 3.45 : + 0.25	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1300
Rated speed rpm guide sleeve	: 1200	LOW IDLE	
travel mm Tolerance mm	: 9.30 : +- 0.20	control lever position degree tolerance degree	
GUIDE SLEEVE POSIT		control lever position degree	: 15.0
Rack travel in mm		tolerance degree	
Tolerance mm		Testing:	
FULL LOAD DELIVERY	AT FULL LOAD STOP	+ Rated speed rpm + rack travel mm + Tolerance mm	
Rated speed rpm Aneroid pressure	: 1100	Rated speed rpm	: 100
hPa	: 1000	+ CRT mm min.	: > 10.00

		→ Tolerance
Rated speed rpm	: 375	- cm3/1000 strokes : +- 2.0 - Check tolerance
TORQUE CONTROL		- + cm3/1000s. : +- 5.0
TORGOL CONTROL		Aneroid pressure
Rated speed rpm	: 1100	+ hPa : -
rack travel mm	: 10.85	+ Rated speed rpm : 500
Tolerance mm	: ← 0.05	+ Del. quantity
		+ cm3/1000 strokes : 111.5
Rated speed rpm	: 700	† Tolerance
rack travel mm	: 10.85	+ cm3/1000 strokes : +- 1.0
Tolerance mm	: +- 0.05	+ Check tolerance
		cm3/1000s. : +- 4.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		- BREAKAWAY
		+
SETTING		+ Rack travel in mm: 9.80
Dawn of the second	. 500	Rated speed rpm : 1145
Rated speed rpm	: 500 : 1000	Tolerance 1/min : +- 5
Pressure hPa rack travel mm		Ī
rack travet mm Tolerance mm		I
COCOLORIOS IMB	0.00	T STARTING FUEL DELIVERY
MEASUREMENT		+
		+ Rated speed rpm : 100
Pressure hPa	- 500	rack travel mm : 20.00
Rated speed rpm	: 500	+ Tolerance mm : + 1.00
Johan annid ave	. 500	+ Del. quantity + cm3/1000 strokes : 280.0
Rated speed rpm	: 500	+ Cms/1000 strokes : 280.0 + Tolerance
ressure hPa	: 600	+ cm3/1000 strokes : +- 10.0
rack travel mm	: 1.55	Check tolerance
Tolerance mm		cm3/1000s. : +- 14.0
ressure hPa	: 350	1
rack travel mm	: 0.50	\mathbf{I}
Folerance mm		
		LOW IDLE
TART CUT-OUT		- + Del. quantity
Tract GOT GOT		+ cm3/1000 strokes : 15.0
ated speed rpm	: > 100	+ Tolerance
Rated speed rpm		+ cm3/1000 strokes : +- 3.0
, ,		† Check tolerance
heck		+ cm3/1000s. : +- 6.0
peed 1/min	: > 80	Spreed
Check	200	Tolerance
speed 1/min	: < 290	+ cm3/1000 strokes : 8.0
		+ Check tolerance - + cm3/1000s. : 12.0
UEL DELIVERY CHA	NRACTERISTICS	+
Aneroid pressure		Ī
iPa	: 1000	1
Rated speed rpm	: 700	
el. quantity		1
cm3/1000 strokes	: 184.0	End of test specification sheet
		•

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15,04,96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 497

Injection pump

Pump designation : PES6P120A120RS3344 : 9 400 087 090 EP type number

Governor

Governer design. : RQV350...1100PA1207 : 9 420 080 379 Governer no.

Cust. part No. : 3355976

Customer-spec. information Customer : CUMMINS

: 6 CTAA - 290 Motor

Power KW : 214.6

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 3.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 4.15 : +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 15.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 15.55 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 207.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes :

5.0

Check tolerance cm3/1000s.

: 9.0

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER control lever position degree	: 63.0
GUIDE SLEEVE TRAV	EL	tolerance degree	: +- 4.0
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1150 : 8.40 : + 0.10	control lever position degree tolerance degree RATED SPEED	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 650 : 5.55 : + 0.25	rack travel mm Rated speed rpm Tolerance 1/min	: 1150
Rated speed rpm guide sleeve travel mm Tolerance mm	: 350 : 1.55 : + 0.25	rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm guide sleeve travel mm Tolerance mm	+	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 1500
Rated speed rpm guide sleeve	: 1400	LOW IDLE	errenningen for den see een een een een een een een een e
travel mm Tolerance mm	: 10.55 : + 0.25	control lever position degree tolerance degree	
GUIDE SLEEVE POSI	TION	control lever	
Rated speed rpm	+	position degree tolerance degree	
Rack travel in mm Tolerance mm		Testing:	
	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	: 7.00
Rated speed rpm Aneroid pressure hPa	: 1100 : 1300	Rated speed rpm	: 100
Hra	· 1500	CRT mm min.	: > 9.50

Rated speed rpm	: 375	Tolerance cm3/1000 strokes : +- 2.0 Check tolerance
TORQUE CONTROL	+	cm3/1000s. : +- 5.0
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 15.55 : + 0.05	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 125.0
Rated speed rpm rack travel mm Tolerance mm	: 15.95	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING Rated speed rpm Pressure hPa rack travel mm	: 1300 : 15.95	Rack travel in mm : 14.50 Rated speed rpm : 1150 Tolerance 1/min : +- 5
Tolerance mm MEASUREMENT	: ← 0.05	STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm	500	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00 Del. quantity
Rated speed rpm	: 500	cm3/1000 strokes : 190.0 Tolerance
Pressure hPa rack travel mm Tolerance mm	: 2.75	cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 14.0
Pressure hPa rack travel mm Tolerance mm	: 400 : 1.10 : + 0.10	
		LOW IDLE
START CUT-OUT Rated speed rpm	: > 100	Del. quantity cm3/1000 strokes : 44.0 Tolerance
Rated speed rpm Check	: < 270	<pre>cm3/1000 strokes : ← 3.0 Check tolerance cm3/1000s. : ← 6.0</pre>
speed 1/min Check	:> 80	Spreed Tolerance
speed 1/min	: < 290	cm3/1000 strokes : 8.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000s. : 12.0
Aneroid pressure hPa Rated speed rpm	: 1300 : 700	
Del. quantity cm3/1000 strokes	: 217.0	End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 498

Injection pump

Pump designation : PES6P12OA12ORS3344 EP type number : 9 400 087 090

Governor

Governer design. : RQV350...1100PA1216 : 9 420 080 380 Governer no.

Cust. part No. : 3355978

Customer-spec. information Customer : CUMMINS

: 6 CTAA - 250 Motor

Power KW : 184.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 076

Inlet press. bar : 3.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 : + 1.5 Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm 4.15 : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 15.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 14.55 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 184.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +--4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Nal ministra		+ Del. quantity	. 40/ 5
Del. quantity cm3/1000 strokes	: 44.0	+ cm3/1000 strokes + Tolerance	
Tolerance cm3/1000 strokes	: +- 3.0	+ cm3/1000 strokes + Check tolerance	: +- 1.0
Check tolerance		- cm3/1000s.	: +- 4.0
cm3/1000s. Spreed	: +- 6.0	+ Spreed + Tolerance	
Tolerance	. • • •	+ cm3/1000 strokes	: 5.0
cm3/1000 strokes Check tolerance		+ Check tolerance + cm3/1000s.	: 9.0
cm3/1000s.	: 12.0	<u> </u>	
(D) DETEND OF TA	LICATION DUMP	CONTROL I EVER	
(B) SETTING OF IN WITH GOVERNOR	NJECTION POMP	+ CONTROL LEVER	
		+ control lever + position degree	: 63.0
GUIDE SLEEVE TRAV	/EL	tolerance degree	
Rated speed rpm	: 1150	t control lever	
guide sleeve		position degree	
travel mm Tolerance mm	: 8.40 : + 0.10	tolerance degree	: +- 4.0
Dated aroad arm	: 650	RATED SPEED	
Rated speed rpm guide sleeve	: 650	rack travel mm	: 13.50
travel mm	: 5.55 : + 0.25	Rated speed rpm Tolerance 1/min	
Tolerance mm		+ Toterance Timin	
Rated speed rpm guide sleeve	: 350	+ rack travel mm + Rated speed rpm	
travel mm	: 1.55	Tolerance 1/min	
Tolerance mm	: +- 0.25	+ - rack travel mm	: 0.50
Rated speed rpm	: 500	+ Tolerance mm	: ← 0.50
guide sleeve travel mm	: 4.05	Rated speed rpm	: 1500
Tolerance mm	: + 0.25	+	
Rated speed rpm	: 1400	LOW IDLE	
guide sleeve travel mm	: 10.55	<u> </u>	
Tolerance mm	: + 0.25	control lever	(0.0
		position degree tolerance degree	
GUIDE SLEEVE POSI	TION	control lever	
Rated speed rpm	: 1150	position degree	
Rack travel in mm	: 16.50	tolerance degree	: +- 4.0
Tolerance mm		Testing:	
		Rated speed rpm	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	rack travel mm Tolerance mm	: 7.00 : +- 0.10
Rated speed rpm	: 1100	Rated speed rpm	
Aneroid pressure hPa	: 1000	<u> </u>	
	-	CRT mm min.	: > 9.50

Rated speed rpm	: 375	Tolerance cm3/1000 strokes : + 2.0 check tolerance
TORQUE CONTROL		cm3/1000s. : +- 5.0
Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 14.55 : +- 0.05	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 144.0 Tolerance cm3/1000 strokes : +- 1.0
Tolerance mm	: +- 0.05	Check tolerance cm3/1000s. : + 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING Rated speed rpm Pressure hPa rack travel mm	: 1000 : 14.55	Rack travel in mm: 13.50 Rated speed rpm: 1155 Tolerance 1/min: + 5
Tolerance mm MEASUREMENT	: ← 0.05	STARTING FUEL DELIVERY
Pressure hPa Rated speed rpm		Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00
Rated speed rpm	: 500	+ Del. quantity + cm3/1000 strokes : 190.0 + Tolerance
Pressure hPa rack travel mm Tolerance mm	: 0.85	cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 14.0
Pressure hPa rack travel mm Tolerance mm	: 530 : 0.30 : + 0.10	LOW IDLE
START CUT-OUT	400	Del. quantity cm3/1000 strokes : 44.0
Rated speed rpm Rated speed rpm	: > 100 : < 255	Tolerance cm3/1000 strokes : + 3.0 Check tolerance
Check speed 1/min Check	: > 80	cm3/1000s. : +- 6.0 Spreed Tolerance
speed 1/min	: < 275	cm3/1000 strokes : 8.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	+ cm3/1000s. : 12.0
Aneroid pressure hPa Rated speed rpm	: 1000 : 700	
Del. quantity cm3/1000 strokes		End of test specification sheet

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 499

Injection pump

Pump designation : PE6P110A720RS3289-1 EP type number : 0 411 816 795

Governor

Governer design. : RSV350...900P1A600 Governer no. : 9 420 082 331

Cust. part No. : 1371920

Customer-spec. information Customer : SCANIA Motor : DS1193A Power KW : 211.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar :+ 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

251.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

2.0 x inside diameter :

600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.35 : + 0.05 Tolerance mm Check tolerance mm : \leftarrow 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300 : +- 0.30

Tolerance Check

tolerance *NW : + 0.75

BASIC SETTING

850 Rated speed rom :

Rack travel in mm: 12.35 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 168.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0

		*			
Spreed			l lever		
Tolerance		+ positi	on degree	:	
cm3/1000 strokes :	4.0	tolera	nce degree	: +-	
Check tolerance			l lever		
cm3/1000s. :	7.5	+ positi	on degree	:	
			nce degree		
Del. quantity cm3/1000 strokes :	15.5	1			
Tolerance	(3.3	ASSEMBL	LY GOVERNOR	SETT	T٨
cm3/1000 strokes : +-	- 2.5	1	21 GOVENNON	0211	
Check tolerance		Rated	speed rpm	•	
cm3/1000s. : +-	- 5.0		ravel mm		1
Spreed	.510	1		•	•
Tolerance		A Rated	speed rpm	:	
cm3/1000 strokes :	4.5		nce 1/min	: +-	
Check tolerance	• •	•	ravel mm	:	
cm3/1000s. :	7.5	+			
•		+ rack to	ravel mm	:	
			nce mm	; +-	
(B) SETTING OF INJECTI	ON PUMP		speed rpm	:	1
WITH GOVERNOR		+	•		
		+ Rated	speed rpm ravel mm	:	
		+ rack to	ravel mm	:	1
		+			
GUIDE SLEEVE POSITION			speed rpm	:	
			nce 1/min	: +-	
Rated speed rpm :	800	† rack ti	ravel mm	•	
Rack travel in mm :	0.50	+ rack ti	ravel mm	:	
Tolerance mm : +-		*	nce mm	: +-	
	-		speed rpm	:	
governor spring		+			
pre-tension			speed rpm		_
click setting x :	2.75	† rack ti	ravel mm	:	1
		+			
	P. (1 1 1 1 1 1 1 1 1 1		speed rpm	:	
FULL LOAD DELIVERY AT	FULL LOAD STOP		nce 1/min	: +-	
Datad apadd ant	850	† rack tr	ravel mm	:	
Rated speed rpm :	850	I made to	ravet mm	•	
Aneroid pressure	1200		ravet mm nce mm	: +-	
hPa : Del. quantity	1200		speed rpm	• •	1
cm3/1000 strokes :	168 N	I raced s	sheen thin	•	ı
Tolerance	100.0	I Rated	speed rpm	:	
	1.0		ravel mm	:	1
Check tolerance	1.0	T I GUN CI	POACE USH	•	•
cm3/1000s. : +-	4.0	Pated o	speed rpm	•	
Spreed	-r• v		nce 1/min	: +-	
Tolerance			avelmm	•	
cm3/1000 strokes :	4.0	1 1 1 1 1 1 1	GTOC HAN	•	
Check tolerance	⊤∙∙	rack tr	avel mm	:	
cm3/1000s. :	7.5		ice mm	. +-	
CHI27 (0000			peed rom	•	1
		1	Poor 1 Edit	•	٠
		+ Rated s	peed rpm	:	•
CONTROL LEVER			avelmm	:	1
		+			٠
		+ Rated s	peed rpm	:	9

Tolerance 1/min : +- 4 rack travel mm : 4.00	
rack travel mm : 0.50	- ANEROID/ALTITUDE - COMPENSATOR TEST
Tolerance mm : + 0.50 Rated speed rpm : 1000	
Rated speed rpm : 905 - rack travel mm : 11.30	- SETTING - - Rated speed rpm : 500
Rated speed rpm : 934	- Pressure hPa : 1200 - rack travel mm : 12.35
Tolerance 1/min : + 4 rack travel mm : 4.00	- Tolerance mm : +- 0.05
rack travel mm : 0.50	- MEASUREMENT
Tolerance mm : +- 0.50 Rated speed rpm : 1000	- Pressure hPa : - Rated speed rpm : 500 - rack travel mm : 9.95
LOW IDLE	- Tolerance mm : +- 0.15 -
+	- Rated speed rpm : 500
control lever position degree : 68.0	- Pressure hPa : 200 - rack travel mm : 11.60 - Tolerance mm : +- 0.10
tolerance degree : +- 4.0 control lever	•
position degree : 18.0 + tolerance degree : + 4.0 +	- Pressure hPa : 140 - rack travel mm : 10.75 - Tolerance mm : +- 0.05
10000, 41,000 009,000	
Setting point w/out bumper spring	- - -
+	- FUEL DELIVERY CHARACTERISTICS
Setting point w/out bumper spring Rated speed rpm : 350	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa:
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 395	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : + 30	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : 40.10 rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : + 30 Rated speed rpm : 100	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm : 850	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00
Setting point w/out bumper spring Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : + 0.10 rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 269.0
Rated speed rpm : 350 rack travel mm : 5.50 Testing: Rated speed rpm : 350 rack travel mm : 6.00 Tolerance mm : 4.00 rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : + 30 Rated speed rpm : 100 CRT mm min. : > 19.00 TORQUE CONTROL Rated speed rpm : 850 rack travel mm : 12.35	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 113.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : +- 1.00 Del. quantity

LOW IDLE

Del. quantity
cm3/1000 strokes : 15.5
Tolerance
cm3/1000 strokes : + 2.5
Check tolerance
cm3/1000s. : + 5.0
Spreed
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000 strokes : 7.5

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 15,04,96 Edition Test oil : ISO 4113 Combination No. : 9 400 087 501 Injection pump Pump designation : PES5P120A720LS7280 EP type number : 9 400 087 087 Governor Governer design. : RQV300...950PA1249 : 9 420 080 389 Governer no. Cust. part No. : 4750747302 Customer-spec. information : MBB Customer : OM 449 LA-EURO I Motor Power KW : 220.7 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C 2.0 Tolerance °C Overflow valve : 1 417 413 047

REMARKS	
(A) INJECTION PUMI Set equal delivery per values	
BEGINNING OF DELIV	/ERY
Test pressure bar Tolerance bar	: 26.0 : +- 1.0
Prestroke mm Tolerance mm Check	: 4.65 : +- 0.05
tolerance mm	: +- 0.10
Rack travel in mm	: 21.00
Firing order	: 1-3-5-4-6
Phasing	: 0-72-144-216-288
BASIC SETTING	
Rated speed rpm	: 700
Rack travel in mm Tolerance mm	: 13.75 : + 0.05
Del. quantity cm3/*000 strokes	: 263.5
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance	: 5.0
	: 9.0

x inside diameter: 3.0 x length mm : 1000

Inlet press. bar :

Test nozzle holde

Opening pressure

Tolerance bar

Test lines

Outside diameter :

assembly

2.0

: 1 688 901 105

208.5

: 1 680 750 075

8.0

Tolerance	+	- Check tolerance	
cm3/1000 strokes Check tolerance	: +- 3.0	- cm3/1000S. - Spreed	: +- 4.0
cm3/1000s. Spreed	: ← 6.0	- Tolerance - cm3/1000 strokes	. 50
opreed Tolerance	7	- Check tolerance	
cm3/1000 strokes Check tolerance	: 8.0	- cm3/1000s.	: 9.0
cm3/1000s.	: 12.0	•	
	#	- CONTROL LEVER	
(B) SETTING OF IN	NUECTION PUMP		
WITH GOVERNOR	_	control lever position degree	
GUIDE SLEEVE TRAV	VEL T	tolerance degree	. +- 4.0
Rated speed rpm	: 1050	control leverposition degree	· 117.0
guide sleeve	+	tolerance degree	
travel mm Tolerance mm	: 7.80 : + 0.10	RATED SPEED	
Rated speed rpm	: 700	· rack travel mm	: 12.70
guide steeve	+	Rated speed rpm	: 995
travel mm Tolerance mm	: 5.45 : + 0.25	Tolerance 1/min	; +- 5
	+	rack travel mm	
Rated speed rpm guide sleeve	: 300	Rated speed rom Tolerance 1/min	: 1125 : +- 15
travel mm	: 0.75		
Tolerance mm	: + 0.25	rack travel mm Tolerance mm	
Rated speed rpm guide sleeve	: 500	Rated speed rpm	
travel mm	: 3.55		
Tolerance mm	: + 0.25	LOW IDLE	aran da aran d
Rated speed rpm guide sleeve	: 1165		
travel mm	: 9.45	control lever	
Tolerance mm	: ← 0.25	position degree tolerance degree	: 83.0 : +- 4.0
GUIDE SLEEVE POSI	TION	control lever	
	+	position degree	: 18.0
Rated speed rpm	: 1120	tolerance degree	: +- 4.0
Rack travel in mm Tolerance mm	1: 16.50	Testing:	
TOTETATIVE IIIII	T 1.30	Rated speed rpm	: 300
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	: 5.30 : + 0.10
Rated speed rpm Aneroid pressure		Rated speed rpm	
hPa	: 1300	CRT mm min.	: > 9.00
Del. quantity cm3/1000 strokes	: 263.5	Rated speed rpm	: 325
Tolerance cm3/1000 strokes	: + 1.0		

		+ Check tolerance
TORQUE CONTROL		Spreed Tolerance
Rated speed rpm rack travel mm		cm3/1000 strokes : 8.0 Check tolerance
Tolerance mm		cm3/1000s. : 12.0
Rated speed rpm rack travel mm		Aneroid pressure hPa : -
Tolerance mm	: +- 0.05	Rated speed rpm : 500
ANEROID/ALTITUDE		
COMPENSATOR TEST		cm3/1000 strokes : +- 1.0 Check tolerance
SETTING		+ cm3/1000s. : +- 4.0 + Spreed
Rated speed rpm Pressure hPa		Tolerance cm3/1000 strokes : 5.0 check tolerance
rack travel mm Tolerance mm	: 13.75	cm3/1000s. : 9.0
MEASUREMENT	. 0.03	BREAKAWAY
Pressure hPa	: -	‡
Rated speed rpm		+ Rack travel in mm : 12.70 + Rated speed rpm : 995
Rated speed rpm		+ Tolerance 1/min : +- 5 +
Pressure hPa rack travel mm	: 800 : 2.85	
Tolerance mm	: ← 0.15	STARTING FUEL DELIVERY
Pressure hPa rack travél mm	: 480 : 0.90	Rated speed rpm : 100 Del quantity
Tolerance mm	: ← 0.10	+ cm3/1000 strokes : 250.0 + Tolerance
START CUT-OUT	<u>,</u>	
Rated speed rpm	: > 100	+ cm3/1000s. : + 14.0
Rated speed rpm	: < 220	‡ †
Check speed 1/min Check	: > 80	LOW IDLE
speed 1/min	: < 240	Del. quantity cm3/1000 strokes : 17.0
FUEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure		+ Check tolerance + cm3/1000s. : +- 6.0
hPa Rated speed rpm	: 1300 : 950	+ Spreed + Tolerance
Del. quantity cm3/1000 strokes		cm3/1000 strokes : 8.0 Check tolerance
Tolerance cm3/1000 strokes		- cm3/1000s. : 12.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 15.04.96 Edition : ISO 4113 Test oil Combination No. : 9 400 087 502 Injection pump Pump designation : PES6P120A720LS7257 : -10 EP type number : 9 400 087 086 Governor Governer design: : RQV300...950PA1262 : 9 420 080 394 Governer no. Cust. part No. : 0260749902 Customer-spec. information Customer : MBB Motor : OM 447 LA Power KW : 301.6 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C Tolerance °C 2.0 : 1 417 413 047 Overflow valve Inlet press. bar : 2.0 Test nozzle holde : 1 688 901 105 assembly Opening pressure 208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 075

8.0

x inside diameter x length mm	: 3.0 : 1000
REMARKS	
(A) INJECTION PUM Set equal delivery per values	
BEGINNING OF DELIV	
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check tolerance mm	: 4.65 : + 0.05 : + 0.10
Rack travel in mm	
Firing order	: 6-2-4-1-5- : 3
Tilling Order	: 3
Phasing	: 0-60-120-180-240 : -300
BASIC SETTING	and the second control of the second
Rated speed rpm	: 600
Rack travel in mm Tolerance mm	: 14.65 : +- 0.05
Del. quantity cm3/1000 strokes	: 301.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

Test lines

Outside diameter :

Spreed Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : (B) SETTING OF INJECT	+ 3.0 + 6.0 8.0 12.0	Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 4.0
WITH GOVERNOR	‡	control lever position degree	: 52.0
CHART OF THE TRAVE		tolerance degree	
GUIDE SLEEVE TRAVEL	‡	control lever	
guide steeve	1050	position degree tolerance degree	
travel mm : Tolerance mm :	7.80	RATED SPEED	
ioterarice min .	7	RATED SPEED	
Rated speed rpm : guide sleeve	700 5.45	rack travel mm Rated speed rpm	: 990
	+ 0.25	Tolerance 1/min	: +- 5
Rated speed rpm : guide sleeve	300	rack travel mm Rated speed rpm Tolerance 1/min	: 1130
travel mm : Tolerance mm :	+ 0.75 + 0.25	rack travel mm Tolerance mm	
guide sleeve	500	Rated speed rpm	
travel mm : Tolerance mm :	3.25 ← 0.25		
Rated speed rpm :	+	LOW IDLE	
guide sleeve travel mm :	9.45	control lever	
Tolerance mm :		position degree tolerance degree	: 82.0 : +- 4.0
GUIDE SLEEVE POSITIO	ON -	control lever position degree	: 17.0
Rated speed rpm :	1120	tolerance degree	: + 4.0
Rack travel in mm : Tolerance mm :		Testing:	·
. 4 54 . 4.194 . 1991	+	Rated speed rpm	: 300
FULL LOAD DELIVERY A	T FULL LOAD STOP	rack travel mm Tolerance mm	: 5.50 : +- 0.10
Rated speed rpm : Aneroid pressure	+	Rated speed rpm	: 100
hPa : Del. quantity	1400	CRT mm min.	: > 8.50
cm3/1000 strokes :	301.5	Rated speed rpm	: 325

		+ Del. quantity
TORQUE CONTROL		- + cm3/1000 strokes : 284.5 + Tolerance
TORQUE CONTROL		+ cm3/1000 strokes : + 2.0
Rated speed rpm	: 600	+ Check tolerance
rack travel mm		+ cm3/1000s. : +- 5.0
Tolerance mm	: ← 0.05	+ Spreed
		+ Tolerance
Rated speed rpm		+ cm3/1000 strokes : 8.0
rack travel mm		+ Check tolerance
Tolerance mm	: ← 0.05	+ cm3/1000s. : 12.0
Pated speed som	: 750	Aneroid pressure
Rated speed rpm rack travel mm		hPa : 1400
Tolerance min		Rated speed rpm : 750
ישנכי מוונכ ואוו	0.05	+ Del. quantity
·		- + cm3/1000 strokes : 293.0
ANEROID/ALTITUDE		Tolerance
COMPENSATOR TEST		cm3/1000 strokes : + 2.0
TOTAL CHOPPING COLOR		Check tolerance
		+ cm3/1000s. : +- 5.0
SETTING		+ Spreed
		+ Tolerance
Rated speed rpm	: 500	+ cm3/1000 strokes : 8.0
Pressure hPa	: 1480	Check tolerance
rack travel mm	: 14.65	+ cm3/1000s. : 12.0
olerance mm		+
	3,22	Aneroid pressure
MEASUREMENT		+ hPa : -
a menterieri		Rated speed rpm : 500
Pressure hPa	; -	+ Del. quantity
Rated speed rpm	500	+ cm3/1000 strokes : 146.5
and the second second second second		Tolerance
Rated speed rpm	: 500	+ cm3/1000 strokes : + 1.0
• •		† Check tolerance
Pressure hPa	: 1000	+ cm3/1000s. : +- 4.0
rack travel mm	: 2.75	Spreed
Tolerance mm	: +- 0.15	+ Tolerance
		+ cm3/1000 strokes : 5.0
Pressure hPa	: 660	† Check tolerance
rack travel mm	: 1.00	+ cm3/1000s. : 9.0
olerance mm	: +- 0.10	†
		DDEALANA
TART CUT-OUT		- † BREAKAWAY
וטטייוטט ואאו		\perp
Rated speed rpm	: > 100	Rack travel in mm: 13.60
Rated speed rpm		Rated speed rpm : 990
arca opeca i pili		+ Tolerance 1/min : +- 5
heck		1
speed 1/min	: > 80	
heck		
speed 1/min	: < 240	
		+
speca irmiir		Dotted annual number 100
		- 🕂 Rated speed rpm : 100
	RACTERISTICS	+ Rated speed rpm : 100 + Del. quantity
FUEL DELIVERY CHA	RACTERISTICS	
	RACTERISTICS	Del. quantity cm3/1000 strokes : 265.0 Tolerance
FUEL DELIVERY CHA	RACTERISTICS: 1400	Del. quantity + cm3/1000 strokes : 265.0

D10

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : + 3.0
Check tolerance
cm3/1000s. : + 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 087 503

Injection pump

Pump designation : PES5P120A720LS7280 : 9 400 087 087 EP type number

Governor

Governer design. : RQV300...950PA1263

Governer no. : 9 420 080 392

Cust. part No. : 0270740102

Customer-spec. information

: MBB Customer

: OM 449 LA-EURO I Motor

: 206.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3 x length mm : 1000 3.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 4.65 Tolerance mm : + 0.05Check

tolerance mm

: +- 0.10

Rack travel in mm: 21.00

Firing order : 1-3-5-4-2

: 0-72-144-216-288 Phasing

BASIC SETTING

600 Rated speed rpm :

Rack travel in mm: 13.45 Tolerance mm : ← 0.05

Del. quantity cm3/1000 strokes : 246.0

Tolerance cm3/1000 strokes : \leftarrow 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. 9.0

Del. quantity

cm3/1000 strokes : 11.5

Tolerance	+ Check tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000s. : +- 4.0
Check tolerance	+ Spreed
cm3/1000s. : +- 6.0	+ Tolerance
Spreed	+ cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 8.0	+ cm3/1000s. : 9.0
Check tolerance	The result of th
cm3/1000s. : 12.0	1
	+ CONTROL LEVER
(B) SETTING OF INJECTION PUMP	Tommore Ecocit
WITH GOVERNOR	control lever
	position degree : 52.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	1
	+ control lever
Rated speed rpm : 1050	position degree : 117.0
guide sleeve	tolerance degree : + 4.0
travel mm : 7.80	1
Tolerance mm : + 0.10	A RATED SPEED
	1
Rated speed rpm : 700	rack travel mm : 12.10
guide steeve	Rated speed rpm : 1005
travel mm : 5.45	Tolerance 1/min : + 5
Tolerance mm : + 0.25	+
	rack travel mm : 4.00
Rated speed rpm : 300	Rated speed rpm : 1125
guide sleeve	Tolerance 1/min : + 15
travel mm : 0.75	
Tolerance mm : + 0.25	rack travel mm : 0.50
•	Tolerance mm : + 0.50
Rated speed rpm : 500	Rated speed rpm : 1220
guide sleeve	1
travel mm : 3.55	}
Tolerance mm : +- 0.25	
	LOW IDLE
Rated speed rpm : 1165 -	+
guide sleeve	}
travel mm : 9.45	+ control lever
Tolerance mm : +- 0.25	position degree : 83.0
•	tolerance degree : + 4.0
	+
GUIDE SLEEVE POSITION -	the control lever
-	position degree : 18.0
Rated speed rpm : 1120 -	tolerance degree : + 4.0
-	+
Rack travel in mm: 16.50 -	† Testing:
Tolerance mm : + 1.30 -	
•	Rated speed rpm : 300 rack travel mm : 5.30
	rack travel mm : 5.30 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP -	Tolerance mm : + 0.10
7	100
Rated speed rpm : 600	Rated speed rpm : 100
Aneroid pressure	1 22
hPa : 1200	CRT mam min. :> 8.00
Del. quantity	705
cm3/1000 strokes : 246.0	Rated speed rpm : 325
Tolerance	†
cm3/1000 strokes : + 1.0	†

		+ Check + speed 1/min : < 240
TORQUE CONTROL		1
Rated speed rpm rack travel mm Tolerance mm	: 600 : 13.45 : + 0.05	FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1200
Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.15 : +- 0.05	Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 232.5
Rated speed rpm		Tolerance : + 2.0
rack travel mm Tolerance mm	: 13.15	+ Check tolerance + cm3/1000s. : + 5.0
Rated speed rpm rack travel mm	: 13.45	Spreed Tolerance cm3/1000 strokes : 8.0
Tolerance mm Rated speed rpm	: + 0.05 : 800	Check tolerance cm3/1000s. : 12.0
rack travel mm Tolerance mm	: 13.45	Aneroid pressure hPa: 1200 Rated speed rpm: 750 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes : 243.0 Tolerance
SETTING		cm3/1000 strokes : +- 2.0 + Check tolerance + cm3/1000s. : +- 5.0
Rated speed rpm Pressure hPa	: 1200	+ Spreed + Tolerance + cm3/1000 strokes : 8.0
rack travel mm Tolerance mm	: 13.45 : ← 0.05	Check tolerance cm3/1000s. : 12.0
MEASUREMENT		Aneroid pressure hPa : -
,	500	Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 149.5
Rated speed rpm Pressure hPa	: 500 : 700	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
rack travel mm Tolerance mm	: 1.75 : ← 0.15	+ cm3/1000s. : + 4.0 Spreed + Tolerance
Pressure hPa rack travel mm	: 500 : 0.60	cm3/1000 strokes : 5.0 Check tolerance
Tolerance mm	: +- 0.10	cm3/1000s. : 9.0
START CUT-OUT		BREAKAWAY
Rated speed rpm Rated speed rpm	: > 100 : < 220	Rack travel in mm: 12.10 Rated speed rpm: 1005
Check speed 1/min	: > 80	+ Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity cm3/1000 strokes : 265.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 14.0

LOW IDLE

Del. quantity

cm3/1000 strokes : 11.5

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s.

6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 505

Injection pump

Pump designation : PE6P110A720RS3289-1 EP type number : 0 411 816 795

Governor

Governer design. : RSV350...1100P1A626 Governer no. : 9 420 082 332

Cust. part No. : 1377813

Customer—spec. information Customer : SCANIA Motor : DS1192A Power KW : 186.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. $^{\circ}$ C : 40 Tolerance $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.35
Tolerance mm : +- 0.05
Check

tolonon

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 11.25 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 145.0

Tolerance cm3/1000 strokes	: + 1.0	+ control lever + position degree	: 49.0
Check tolerance cm3/1000s.	: +- 4.0	tolerance degree	
Spreed Tolerance cm3/1000 strokes	: 4.0	control lever position degree tolerance degree RATED SPEED	
Check tolerance cm3/1000S.	: 7.5	rack travel mm Rated speed rpm	
Del. quantity cm3/1000 strokes	: 8.5	Tolerance 1/min	
Tolerance cm3/1000 strokes Check tolerance	: +- 2.5	rack travel mm Rated speed rpm Tolerance 1/min	: 995
cm3/1000s. Spreed	: +- 5.0	rack travel mm	: 0.85
Tolerance		+ Tolerance mm	: +- 0.55
cm3/1000 strokes Check tolerance	: 4.5	Rated speed rpm	
cm3/1000s.	: 7.5	ASSEMBLY GOVERNOR	R SETTING
(B) SETTING OF INJ	ECTION PUMP	Rated speed rpm rack travel mm	: 750 : 11.30
		Rated speed rpm Tolerance 1/min rack travel mm	
GUIDE SLEEVE POSIT	TION	+	
Rated speed rpm		+ rack travel mm + Tolerance mm + Rated speed rpm	: 0.50 : + 0.50 : 850
Rack travel in mm Tolerance mm	: 0.50 : +- 0.20	Rated speed rpm rack travel mm	
Rated speed rpm	AT FULL LOAD STOP	Rated speed rpm Tolerance 1/min rack travel mm	: 789 : + 4 : 4.00
Aneroid pressure hPa Del. quantity cm3/1000 strokes	: 700 : 145.0	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
Tolerance cm3/1000 strokes	: +- 1.0	Rated speed rpm rack travel mm	: 752 : 11.30
	: +- 4.0	+	
Spreed Tolerance		+ Rated speed rpm + Tolerance 1/min	
cm3/1000 strokes Check tolerance	: 4.0	rack travel mm	4.00
cm3/1000s.	: 7.5	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 850
CONTROL LEVER		Rated speed rpm rack travel mm	: 753 : 11.30

Rated speed rpm : 791 Tolerance 1/min : +- 4 rack travel mm : 4.00
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 850
Rated speed rpm : 754 rack travel mm : 11.30
Rated speed rpm : 792 Tolerance 1/min : + 4 rack travel mm : 4.00
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 850
Rated speed rpm : 755 rack travel mm : 11.30
Rated speed rpm : 793 Tolerance 1/min : +- 4 rack travel mm : 4.00
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 850
LOW IDLE
control lever position degree : 74.0 tolerance degree : + 4.0
control lever position degree : 24.0 tolerance degree : + 4.0
Setting point w/out bumper spring
Rated speed rpm : 350 rack travel mm : 4.50
Testing:
Rated speed rpm : 350 rack travel mm : 5.00 Tolerance mm : +- 0.10
rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30
Rated speed rpm : 100

CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 900 : 11.25 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.30 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 11.25 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm	: - : 500
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 200 : 1.10 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 150 : 0.35 : +- 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 700 : 600
cm3/1000 strokes Tolerance	: 148.5
cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 5.0
Aneroid pressure hPa Rated speed rpm	: - 500

Del. quantity cm3/1000 strokes : 116.0 Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000s. 4.0 BREAKAWAY Rack travel in mm: 10.20 Rated speed rpm Tolerance 1/min STARTING FUEL DELIVERY 100 Rated speed rpm rack travel mm 20.00 Tolerance mm : +- 1.00 Del. quantity cm3/1000 strokes : 255.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0 LOW IDLE Del. quantity cm3/1000 strokes : 8.5 Tolerance 2.5 cm3/1000 strokes : Check tolerance cm3/1000s. 5.0 Spreed Tolerance 4.5 cm3/1000 strokes : Check tolerance cm3/1000S. 7.5 End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 17.04.96 Test oil : ISO 4113 Combination No. : 9 400 087 506 Injection pump Pump designation : PES6P120A320/3RS3365 EP type number : 9 400 087 092 Governor Governer design. : RSV450...900P1A628 Governer no. : 9 420 082 333

Cust. part No.	:
Customer-spec. in Customer Motor Power KW	nformation : CUMMINS : 6CTAAG : 240.0
TEST BENCH REQUIR	REMENTS
Inlet line	: 3.2
Test oil inlet temp. °C Tolerance °C	: 40 : + 2.0
Overflow valve	: 1 417 413 047
Inlet press. bar Tolerance bar	: 1.5 : + 0.1

: 1 688 901 105

: **←** 1.5

Test Lines : 1 680 750 015

Outside diameter :

208.5

6.0

REMARKS	
(A) INJECTION PUM Set equal deliver per values	y quant.
BEGINNING OF DELIV	VERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check	: 3.40 : + 0.05
	: +- 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-5- 3- 6- 2 : 4
Phasing	: 0-60-120-180-240 : -300
BASIC SETTING	
Rated speed rpm	: 900
Rack travel in mm Tolerance mm	
Del. quantity cm3/1000 strokes	: 262.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000S.	: + 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 9.0

x inside diameter:

x length mm

3.0

: 600

bar

Test nozzle holde

Opening pressure

Tolerance bar

assembly

Del. quantity cm3/1000 strokes	: 18.0	İ	ASSEMBLY GOVERNOR	SETTING
Tolerance cm3/1000 strokes		Ţ	Rated speed rpm rack travel mm	: 942 : 10.80
Check tolerance cm3/1000s. Spreed	: + 6.0	<u>†</u>	Rated speed rpm Tolerance 1/min	: 982 : +- 4
Tolerance cm3/1000 strokes	: 8.0	Ī	rack travel mm	4.00
Check tolerance cm3/1000s.	: 12.0	† †	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1030
(B) SETTING OF IN	JECTION PUMP	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm rack travel mm	: 943 : 10.80
		‡	Rated speed rpm Tolerance 1/min	: 983 : + 4
GUIDE SLEEVE POSI	FION	‡	rack travel mm	: 4.00
Rated speed rpm Rack travel in mm		†	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1030
Tolerance mm		Ī	Rated speed rpm	: 944
governor spring pre-tension		1	rack travel mm	: 10.80
click setting x	: 5.75	+	Rated speed rpm Tolerance 1/min rack travel mm	: 984 : + 4 : 4.00
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	+		
Rated speed rpm Aneroid pressure	: 900	Ŧ	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1030
hPa Del. quantity cm3/1000 strokes	: 262.0	† †	Rated speed rpm rack travel mm	: 945 : 10.80
Tolerance cm3/1000 strokes Check tolerance	: + 1.0	‡	Rated speed rpm Tolerance 1/min	: 985 : +- 4
cm3/1000s. Spreed	: +- 4.0	‡	rack travel mm	: 4.00
Tolerance cm3/1000 strokes Check tolerance	: 5.0	‡	rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1030
cm3/1000s.	: 9.0	+	Rated speed rpm	946 10.80
		Ŧ		
control lever		‡	Rated speed rpm Tolerance 1/min rack travel mm	986 + 4 4.00
position degree tolerance degree		†	rack travel mm Tolerance mm	: 0.50 : + 0.50
control lever position degree	: 109.0	+	Rated speed rpm	: 1030
tolerance degree		‡	Rated speed rpm rack travel mm	: 947 : 10.80

Rated speed rpm : 987
Tolerance 1/min : + 4
rack travel mm : 4.00

LOW IDLE

control lever position degree : 81.0 tolerance degree : +- 4.0

control lever position degree : 31.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 4.00

Testing:

Rated speed rpm : 450 rack travel mm : 4.50 Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 485
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 11.85 Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

Del. quantity cm3/1000 strokes : 302.0 Tolerance cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 : +-Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W480/...

Edition : 01.12.95 Test oil : ISO 4113

Combination No. : 9 400 030 723

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0C838R

Governer no. : 9 420 034 708

Cust. part No. :

Customer-spec. information Customer : CUMMINS

Motor : 6BT - 148 HP

TEST BENCH REQUIREMENTS

Inlet line : 1.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.10 Tolerance mm : + 0.05

Rated speed rpm : 475

Rack travel in mm: 5.80

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

Rated speed rpm : 800

Rack travel in mo Tolerance mm governor spring pre-tension click setting x	: +- 0.20
cerek seeting x	. 5.00
CONTROL LEVER	
control lever position degree tolerance degree	: 104.0 : +- 4.0
RATED SPEED	
rack travel mm Rated speed rpm Tolerance 1/min	: 11.00 : 1135 : ← 5
rack travel mm Rated speed rpm Tolerance 1/min	: 1230
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : ← 0.55 : 1290
rack travel mm Rated speed rpm	
LOW IDLE	
control lever position degree tolerance degree	: 82.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm	: 475 : 5.30
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 475 : 5.80 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 565
Rated speed rpm	: 100
CRT mm min.	: > 19.50

TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.10 : +- 0.05
Rated speed rom reck travel mm Tolerance mm	: 800 : 12.80 : + 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Pressure hPa	: 800
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 10.70 : + 0.10
Pressure hPa rack travel mm Tolerance mm	: 700 : 12.50 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 560 : 12.00 : + 0.20
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 11.00 : 1135 : + 5
STARTING FUEL DELI	
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.25 : + 0.75
LOW IDLE	

Rated speed rpm : 475 rack travel mm : 5.80

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13.04.96 Test oil : ISO 4113

Combination No. : 9 400 030 751

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1050A0C866R

Governer no. : F 002 A20 202

Cust. part No. : 393 0158

Customer—spec. information Customer : CUMMINS Motor : 6BT Power KW : 94.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

tolerance °NW : ← 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.00 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 86.1	Check tolerance cm3/1000s. : 6.5
Tolerance cm3/1000 strokes : +- 1.0	
Check tolerance cm3/1000s. : + 3.0	CONTROL LEVER control lever position degree : 105.0
Spreed Tolerance cm3/1000 strokes : 4.0	tolerance degree : +- 4.0 RATED SPEED
Check tolerance cm3/1000s. : 6.5	rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes : 18.6 Tolerance	rack travel mm : 4.00 Rated speed rpm : 1190
cm3/1000 strokes : + 2.0 + Check tolerance +	Toterance 1/min : +- 15
cm3/1000s. : + 4.5 + Tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1280
cm3/1000 strokes : 6.0 + Check tolerance +	rack travel mm : 4.00
cm3/1000s. : 8.0	Rated speed rpm : 1200
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION +	control lever position degree : 87.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	Setting point w/out bumper spring Rated speed rpm : 475
governor spring	rack travel mm : 6.10
pre-tension thick setting x : 4.00	Testing:
	Rated speed rpm : 475 rack travel mm : 6.60
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10 rack travel mm : 2.00
Rated speed rpm : 1050 + Aneroid pressure + 800 + Aneroid pressure + A	rack travel mm : 2.00 Rated speed rpm : 610 Tolerance 1/min : +- 30
Del. quantity cm3/1000 strokes : 86.1	Rated speed rpm : 100
Tolerance cm3/1000 strokes : + 1.0	CRT mm min. : > 19.50
Check tolerance cm3/1000s. : +- 3.0 +- Spreed	TORQUE CONTROL
Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 1050

12.00 rack travel mm : +- 0.05 Tolerance mm 008 Rated speed rpm 12,60 rack travel mm : +- 0.10 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING 650 Rated speed rpm 800 Pressure hPa **MEASUREMENT** Pressure hPa 650 Rated speed rpm 11.75 rack travel mm : + 0.10Tolerance mm 650 Rated speed rom Pressure hPa 550 rack travel mm 12.50 : +- 0.20 Tolerance mm Pressure hPa 475 : rack travel mm 12.15 : +- 0.20 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 800 Rated speed rpm 008 Del. quantity cm3/1000 strokes : 97.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0 Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 82.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. 3.0 : +--

BREAKAWAY

Rack travel in mm : 11.00
Rated speed rpm : 1095
Tolerance 1/min : +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 15.0

LOW IDLE

Del. quantity cm3/1000 strokes : 18.6 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 : +-Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Combination No. : 0 402 736 874

Injection pump

Pump designation : PES6P12OA12ORS7353 EP type number : 0 412 726 924

Governor

Governer design. : RQV350...1100PA1179K

Governer no. : 0 421 815 445

Cust. part No. : 3928151

Customer—spec. information Customer : CDC Motor : 6CTA-A Power KW : 157.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 4.00
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm: 10.50
Tolerance mm: + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : \leftarrow 0.50

Check

tolerance *NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 5.25 Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.85 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes	: 186.0	<u> </u>
		FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes	: +- 1.0	Rated speed rpm : 1100 Aneroid pressure
Check tolerance cm3/1000s.	: +- 4.0	+ hPa : 1200 + Del. quantity
Spreed		cm3/1000 strokes : 186.0 Tolerance
Tolerance cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 4.0
Check tolerance cm3/1000s.	: 9.0	+ Spreed + Tolerance
Del. quantity		+ cm3/1000 strokes : 5.0 + Check tolerance
cm3/1000 strokes Tolerance	: 23.0	cm3/1000s. : 9.0
cm3/1000 strokes Check tolerance	: +- 3.0	<u> </u>
cm3/1000s. Spreed	: +- 5.0	CONTROL LEVER
Tolerance	: 8.0	control lever
cm3/1000 strokes Check tolerance		+ position degree : 115.0 + tolerance degree : + 6.0
cm3/1000s.	: 12.0	+ RATED SPEED
(B) SETTING OF IN	WECTION PUMP	rack travel mm : 11.70
WITH GOVERNOR		+ Rated speed rpm : 1260 + Tolerance 1/min : +- 15
GUIDE SLEEVE TRAV	/EL	+ rack travel mm : 4.00
	-	+ Rated speed rpm : 1385
Rated speed rpm guide sleeve		+ Tolerance 1/min : + 5
travel mm	2.11	rack travel mm : 0.50
Tolerance mm	: + 0.20	Tolerance mm : + 0.50 Rated speed rpm : 1450
Rated speed rpm guide sleeve	: 1159	Harca speca i più . 1450
travel mm	: 7.79	+
Tolerance mm	: + 0.15	LOW IDLE
Rated speed rpm guide sleeve	: 726	control lever
travel mm	: 4.80	position degree : 67.0
Tolerance mm	: +- 0.25	tolerance degree : +- 6.0
Rated speed rpm guide sleeve	: 420	Testing:
travel mm Tolerance mm	: 3.10 : ← 0.25	Rated speed rpm : 350 rack travel mm : 6.00
Rated speed rpm	: 1640	Tolerance mm : +- 0.20
guide sleeve travel mm	: 13.50	Rated speed rpm : 275
Tolerance mm	: + 0.50	CRT mm min. : > 7.90

Rated speed rpm	: 425	+ Rated speed rpm : 650 + Del. quantity
TORQUE CONTROL		+ cm3/1000 strokes : 166.5 + Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 12.85	- cm3/1000 strokes : + 3.0 Check tolerance - cm3/1000s. : + 6.0 Spreed
Rated speed rpm rack travel mm Tolerance mm	: 650 : 11.80 : + 0.20	Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Rated speed rpm rack travel mm Tolerance mm	: 12.80	Aneroid pressure hPa : - Rated speed rpm : 1100 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		- cm3/1000 strokes : 90.5 - Tolerance - cm3/1000 strokes : + 1.0 - Check tolerance - cm3/1000s. : + 3.0
SETTING		- 10005. ; 7- 3.0
Rated speed rpm Pressure hPa	: 1100 : 1200	BREAKAWAY
MEASUREMENT		Rack travel in mm : 11.70 Rated speed rpm : 1260
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		Tolerance 1/min : + 15
Rated speed rpm		STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm		Rated speed rpm : 100 rack travel mm : 11.00 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 180.0
Pressure hPa rack travel mm Tolerance mm	: 255 : 9.70 : +- 0.05	Tolerance : + 20.0 Check tolerance cm3/1000s. : + 25.0
START CUT-OUT		}
Rated speed rpm Rated speed rpm	: > 100 : < 290	LOW IDLE
Check speed 1/min Check	: > 80	Del. quantity cm3/1000 strokes : 23.0 Tolerance
speed 1/min	: < 300	cm3/1000 strokes : + 3.0 Check tolerance
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000s. : +- 5.0 Spreed
Aneroid pressure hPa	: 1200	Tolerance cm3/1000 strokes : 8.0

E03

Check tolerance cm3/1000s.	:		12.0
		١.	
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# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 Test oil : ISO 4113

Combination No. : 9 400 030 735

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV500...1100ABC848R

Governer no. : 9 420 034 714

Cust. part No. : 3929411

Customer—spec. information
Customer : CDC
Motor : 6BT
Power KW : 82.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C :  Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance "NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.65 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 76.0

ï	
Tolerance cm3/1000 strokes : + 1.0	
Check tolerance cm3/1000s. : +- 3.0	CONTROL LEVER control lever
Spreed Tolerance	position degree : 96.0 tolerance degree : +- 4.0
cm3/1000 strokes : 4.0	RATED SPEED
Check tolerance cm3/1000s. : 6.5	rack travel mm : 8.50 Rated speed rpm : 1165 Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes : 18.5 Tolerance	rack travel mm : 4.50 Rated speed rpm : 1215
cm3/1000 strokes : + 2.0 + Check tolerance +	Tolerance 1/min : ← 5
cm3/1000S. : +- 4.5  Spreed Tolerance	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rom : 1300
cm3/1000 strokes : 6.0 Check tolerance	rack travel mm : 4.50
cm3/1000s. : 8.0	Rated speed rpm : 1215
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 82.0
Rated speed rpm : 800	tolerance degree : +- 4.0  Setting point w/out bumper spring
Rack travel in mm: 0.50 Tolerance mm: +- 0.20	Rated speed rpm : 500 rack travel mm : 4.60
governor spring + pre-tension + click setting x : 4.00 +	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 500 rack travel mm : 5.10 Tolerance mm : +- 0.10
Rated speed rpm : 1100	Rated speed rpm : 100
Aneroid pressure + hPa : - +	CRT mm min. : > 19.00
Del. quantity cm3/1000 strokes : 76.0	TORQUE CONTROL
cm3/1000 strokes : +- 1.0 +	
Check tolerance	Rated speed rpm : 1100
cm3/1000s. : + 3.0 + Spreed	Rated speed rpm : 1100 rack travel mm : 9.65 Tolerance mm : +- 0.05
cm3/1000s. : + 3.0 +	rack travel mm : 9.65

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 800

Del. quantity cm3/1000 strokes :

cm3/1000 strokes : 83.0
Tolerance
cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

#### BREAKAWAY

Rack travel in mm: 8.50
Rated speed rpm: 1165
Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 15.0

# LOW IDLE

Del. quantity cm3/1000 strokes : 18.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 8.0

#### x inside diameter: BOSCH INJ. PUMP TEST SPECIFICATIONS 2.0 x length mm : 600 Note remarks Refer to Service Info for test and adjustment instructions. REMARKS See microcard(s) W400/... : 12.04.96 Edition : ISO 4113 Test oil Combination No. : 9 400 030 747 (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. Injection pump per values _____ Pump designation : PES4A95D32D/3RS288D EP type number : 9 410 037 214 BEGINNING OF DELIVERY Governor Governer design. : RSV475...1100A0C863R Test pressure bar : 17.0 Tolerance bar : + 1.0 Governer no. : 9 420 034 721 Cust. part No. : 3930152 Prestroke mm : + 0.05Tolerance mm Check Customer-spec. information : + 0.10tolerance mm Customer : CDC : 4BT3.9 Rack travel in mm : 10.50 Motor Power KW : 71.0 Tolerance mm : +- 1.50 Firing order : 1-3-4-2 TEST BENCH REQUIREMENTS : 0-90-180-270 Inlet line : 3.2 Phasing Tolerance : +- 0.50 Check tolerance "NW : + - 0.75Test oil inlet temp. °C Tolerance °C Start of delivery blocking Overflow valve : 1 417 413 047 *NW after s.o.d. : 7.50 Tolerance : + 0.50Check Inlet press. bar : 2.0 tolerance *NW : +- 0.75 Tolerance bar : +-0.1 : 1 Barrel no. Test nozzle holde : 1 688 901 101 BASIC SETTING assembly Rated speed rpm : 1100 Opening pressure 208.5 bar Tolerance bar : +- 1.5 Rack travel in mm: 12.25 : +- 0.05 Tolerance mm Test Lines : 1 680 750 014 Del. quantity cm3/1000 strokes : 105.0 Outside diameter : 6.0

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Tolerance	
cm3/1000 strokes : +- 1.0	CONTROL LEVER
Check tolerance cm3/1000s. : + 3.0	control lever position degree : 99.0
Spreed + Tolerance + cm3/1000 strokes : 4.0 +	tolerance degree : +- 4.0  RATED SPEED
Check tolerance cm3/1000s. : 6.5	rack travel mm : 11.25 Rated speed rpm : 1165 Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes : 20.5 Tolerance cm3/1000 strokes : +- 2.0	rack travel mm : 6.00 Rated speed rpm : 1225 Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : +- 4.5	rack travel mm : 0.85
Spreed + Tolerance + cm3/1000 strokes : 6.0 +	Tolerance mm : +- 0.55 Rated speed rpm : 1375
Check tolerance cm3/1000s. : 8.0	rack travel mm : 6.00 Rated speed rpm : 1225
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
†	andral lavan
GUIDE SLEEVE POSITION	control lever position degree : 87.0 tolerance degree : + 4.0
Rated speed rpm : 800	position degree : 87.0
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 87.0 tolerance degree : + 4.0
Rated speed rpm : 800  Rack travel in mm : 0.50	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:  Rated speed rpm : 475 rack travel mm : 5.65
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1000 Del. quantity	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:  Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1000	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:  Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 105.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:  Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00
Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 4.25  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	position degree : 87.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 475 rack travel mm : 5.15  Testing:  Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 12.25

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

750 Rated speed rpm 1000 Pressure hPa

#### **MEASUREMENT**

Pressure hPa .750 Rated speed rpm rack travel mm 11.20 : +- 0.10 Tolerance mm

750 Rated speed rpm

600 Pressure hPa 12.70 rack travel mm : +- 0.20 Tolerance mm

410 Pressure hPa 11.80 rack travel mm : +- 0.20 Tolerance mm

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1000 750 Rated speed rpm Del. quantity

cm3/1000 strokes : 115.0

Tolerance

cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0

Aneroid pressure

hPa 750 Rated speed rpm

Del. quantity

cm3/1000 strokes : 89.0

Tolerance

1.0 cm3/1000 strokes : +-Check tolerance

3.0 cm3/1000s.

# BREAKAWAY

11.25 Rack travel in mm: Rated speed rpm 1165 Tolerance 1/min

# STARTING FUEL DELIVERY

100 Rated speed rpm 20.50 rack travel mm Tolerance mm : ← 0.50 Del. quantity cm3/1000 strokes : 120.5 Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 15.0

#### LOW IDLE

Del. quantity cm3/1000 strokes : 20.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 8.0

#### BOSCH INJ. PUMP TEST SPECIFICATIONS x inside diameter: 2.0 600 x length mm Note remarks Refer to Service Info for test and adjustment instructions. **REMARKS** See microcard(s) W400/... Edition : 12.04.96 Test oil : ISO 4113 Combination No. : 9 400 030 749 (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. Injection pump per values _____ Pump designation : PES4A95D320/3RS288D EP type number : 9 410 037 214 BEGINNING OF DELIVERY Governor Test pressure bar : Governer design. : RSV475...1050A0C864R Tolerance bar : +- 1.0 Governer no. Cust. part No. : 3930155 Prestroke mm 2.45 Tolerance mm : + 0.05Check Customer-spec. information tolerance mm : + 0.10Customer : CDC Rack travel in mm : 10.50 : 4BT3.9 Motor Power KW : 68.5 Tolerance mm : +- 1.50 Firing order : 1-3-4-2 TEST BENCH REQUIREMENTS : 0-90-180-270 Inlet line : 3.2 Phasing Tolerance : + - 0.50Check Test oil inlet tolerance °NW : + 0.75temp. °C Tolerance °C 2.0 Start of delivery blocking Overflow valve : 1 417 413 047 *NW after s.o.d. : 6.50 : + - 0.50Tolerance Check tolerance °NW : +- 0.75 Inlet press. bar : 2.0 Tolerance bar : + 0.1 : 1 Barrel no. Test nozzle holde : 1 688 901 101 BASIC SETTING assembly Rated speed rpm : 1050 Opening pressure 208.5 bar Tolerance bar : +- 1.5 Rack travel in mm : 12.05 Tolerance mm : +- 0.05 Test Lines : 1 680 750 014 Del. quantity Outside diameter : cm3/1000 strokes : 102.5 6.0

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Tolerance +	
cm3/1000 strokes : + 1.0 +	CONTROL I CUED
Check tolerance	CONTROL LEVER
cm3/1000s. : + 3.0	control lever
	position degree : 96.0
Spreed	tolerance degree : + 4.0
Tolerance +	
cm3/1000 strokes : 4.0 +	RATED SPEED
Check tolerance	rack travel mm : 11.25
cm3/1000s. : 6.5	Rated speed rpm : 1105
+	Tolerance 1/min : + 5
Del. quantity	
cm3/1000 strokes : 18.5 +	rack travel mm : 6.00
Tolerance + 2.0 +	Rated speed rpm : 1165
Check tolerance	rack travel mm : 0.85
cm3/1000s. : + 4.5	Tolerance mm : +- 0.55
Spreed	Rated speed rpm : 1275
Tolerance	
cm3/1000 strokes : 6.0	rack travel mm : 6.00
Check tolerance + cm3/1000s. : 8.0 +	Rated speed rpm : 1165
1137 10303	
1	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	
I	control lever
	position degree : 85.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
200	0.442
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.50	Rated speed rpm : 475
Tolerance mm : + 0.20	rack travel mm : 5.15
<del>}</del>	
governor spring +	
, •	Testing:
pre-tension	_
pre-tension click setting x : 2.75	Rated speed rpm : 475
pre-tension click setting x : 2.75	_
pre-tension click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 475 rack travel mm : 5.65
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10 Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050 rack travel mm : 12.05
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050 rack travel mm : 12.05 Tolerance mm : + 0.05  Rated speed rpm : 750
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 4.0	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050 rack travel mm : 12.05 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 13.60
Click setting x : 2.75  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1000 Del. quantity cm3/1000 strokes : 102.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	Rated speed rpm : 475 rack travel mm : 5.65 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1050 rack travel mm : 12.05 Tolerance mm : + 0.05  Rated speed rpm : 750

Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 750 : 1000
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 750 : 11.60 : + 0.10
Rated speed rpm	: 750
Pressure hPa rack travel mm Tolerance mm	: 720 : 13.10 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 510 : 12.10 : +- 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1000 : 750
cm3/1000 strokes Tolerance	: 123.5
cm3/1000 strokes Check tolerance	: 2.0
cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 750
cm3/1000 strokes Tolerance	: 96.0
cm3/1000 strokes Check tolerance	: ← 1.0
cm3/1000s.	: + 3.0

Rack travel in mm	:	11.25
The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	:	1105
Tolerance 1/min	:	+- 5

STARTING	FUEL	DEL	.IVERY
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Rated speed rpm		00
rack travel mm	: 2	0.50
Tolerance mm	: +-	0.50
Del. quantity		
cm3/1000 strokes	: 1	36.5
Tolerance		
cm3/1000 strokes	: +-	10.0
Check tolerance		
cm3/1000s.	: +-	15.0

# LOW IDLE

Del. quantity cm3/1000 strokes	:	18.5
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	:	8.0

End of test specification sheet

BREAKAWAY

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 400 076 953

Injection pump

Pump designation : PES6M55C32ORS203 EP type number : 0 410 056 982

Governor

Governer design. : RSF315/2500M70-11 Governer no. : 0 420 021 270

Cust. part No. :

Customer-spec. information Customer : MB-PKW : 0M606 USA Motor Power KW : 95.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

: 148.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 1.75 Tolerance mm : +- 0.05 Check tolerance mm : +- 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

*NW after s.o.d. : 17.00 Tolerance : +- 0.20 Check

tolerance °NW : +- 0.30

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 38.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : + 1.5

Spreed

Toterance +	
cm3/1000 strokes : 2.5	SET IDLE CONTROL LEVER POSITION
Check tolerance cm3/1000s. : 3.0	Rated speed rpm : 1100
Rated speed rpm : 290	CRT mm max. : 1.95
Rack travel in mm: 7.30 Tolerance mm: + 0.10 Del. quantity	LOW IDLE
cm3/1000 strokes : 8.5	
Tolerance + cm3/1000 strokes : +- 0.5 + Spreed + Tolerance +-	control lever position degree : 10.5 tolerance degree : +- 2.0
cm3/1000 strokes : 1.0	Setting point w/out bumper spring Rated speed rpm : 290 rack travel mm : 7.30
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	SET IDLE AUXILIARY SPRING
IDLE STAGE	Rated speed rpm : 400 rack travel mm : 6.00 Tolerance mm : + 0.10
Rack travel in mm: 6.25 Tolerance mm: + 0.25	rack travel mm : 3.00 Rated speed rpm : 700 Tolerance 1/min : +- 50
FULL LOAD DELIVERY AT FULL LOAD STOP	Load pick-up
Rated speed rpm : 1100 Fef. pressure	Rated speed rpm : 220
ALDA / ADA hPa : 1100 + Del. quantity	CRT mm min. :> 9.00
cm3/1000 strokes : 38.0	Rated speed rpm : 1100
cm3/1000 strokes : +- 0.5 Check tolerance	CRT mm max. : 1.95
cm3/1000s. : + 1.5	rack travel mm : 7.30 Rated speed rpm : 290
Tolerance cm3/1000 strokes : 2.5	
Check tolerance cm3/1000s. : 3.0	TORQUE CONTROL
RATED SPEED	Rated speed rpm : 1100 rack travel mm : 13.15 Tolerance mm : +- 0.05
control lever position degree : 50.0	Rated speed rpm : 2000 rack travel mm : 12.30 Tolerance mm : + 0.15
rack travel mm : 7.90 Rated speed rpm : 2700	Rated speed rpm : 2500 rack travel mm : 11.80
rack travel mm : 1.00 Tolerance mm : + 1.00 Rated speed rpm : 3000	Tolerance mm : +- 0.15  Rated speed rpm : 500
nated speed (pill ) Jobb	mated opeca (pill to 500

rack travel mm Tolerance mm		+ Check tolerance + cm3/1000s. : +- 2.0 + Spreed
Rated speed rpm rack travel mm Tolerance mm	: 12.90	Tolerance : 2.5 Check tolerance
		cm3/1000s. : 3.0
ADJUSTMENT TEST	ADA/ALDA	Ref. pressure
SETTING		Ref. pressure  ALDA / ADA hPa : 1100 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 32.0 Tolerance cm3/1000s. : + 0.8 Check tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0  Ref. pressure ALDA / ADA hPa : 1100 Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 36.2 Tolerance cm3/1000 strokes : 4.8 Check tolerance cm3/1000 strokes : 4.8 Check tolerance cm3/1000 strokes : + 0.8 Check tolerance cm3/1000s. : + 1.8 Spreed Tolerance cm3/1000s. : 2.5 Check tolerance cm3/1000s. : 3.0
Rated speed rpm	: 1100	cm3/1000 strokes : 32.0
Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 940	+ Tolerance + cm3/1000 strokes : +- 0.8
rack travel mm Tolerance mm	: -0.10 : +- 0.10	+ Check tolerance + cm3/1000s. : + 1.8
MEASUREMENT		Tolerance cm3/1000 strokes : 2.5
	: 1100	Check tolerance cm3/1000s. : 3.0
Rated speed rpm Ref. pressure ALDA / ADA hPa		- cm3/1000s. : 3.0
ALDA / ADA hPa rack travel mm	: 900 · -0 40	+ Ref. pressure + ALDA / ADA hPa : 1100
Tolerance mm		Rated speed rpm : 900
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 1100	+ Del. quantity - cm3/1000 strokes : 36.2
ALDA / ADA hPa	: 750	+ Tolerance + cm3/1000 strokes : + 0.8
rack travel mm Tolerance mm	: -1.50 : +- 0.20	+ Check tolerance + cm3/1000s. : +- 1.8
TOCCI GITTE THAT	0.25	Spreed
		+ Tolerance + cm3/1000 strokes : 2.5
FUEL DELIVERY CHA	ARACTERISTICS	Check tolerance cm3/1000s. : 3.0
Ref. pressure ALDA / ADA hPa	• 1100	<u> </u>
Rated speed rpm	: 2000	
Del. quantity cm3/1000 strokes		+ HIGH IDLE
Tolerance		Ref. pressure
cm3/1000 strokes Check tolerance		+ ALDA / ADA hPa : 1100
Check tolerance cm3/1000s.	: +- 1.8	OTANTANO GUEL DEL TUEDO
Spreed Tolerance		+ STARTING FUEL DELIVERY
cm3/1000 strokes		+ Rated speed rpm : 100 + rack travel mm :> 20.10
Check tolerance cm3/1000S.	: 3.0	<pre>Del. quantity</pre>
Ref. pressure		+ cm3/1000 strokes : 52.0 + Spreed
ALDA / ADA hPa Rated speed rpm	: 1100	Tolerance + cm3/1000 strokes : 6.0
Spreed	. 200	+ Check tolerance
Del. quantity cm3/1000 strokes	• 37 3	± cm3/1000s. : 6.0
Tolerance		+
cm3/1000 strokes	: +- 1.0	1

# LOW IDLE

290 Rated speed rpm 7.30 rack travel mm : +- 0.15 Tolerance mm Del. quantity cm3/1000 strokes : 9.5 Check tolerance cm3/1000s. : +- 2.3 Spreed Check tolerance cm3/1000s. 1.5

# SETTING PNEUMATIC FAST IDLE (ELA)

control lever
position degree : 10.5
tolerance degree : + 2.0

# SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever
position degree : 10.5
tolerance degree : +- 2.0
Rated speed rpm : 315

Rack travel in mm: 13.40
Tolerance mm: + 0.70
Del. quantity
cm3/1000 strokes: 35.0
Tolerance

cm3/1000 strokes : +- 3.5

Current A : 1.80

control lever

position degree : 50.0 Rated speed rpm : 3000

Rack travel in mm : 1.00 Tolerance mm : + 1.00

Current short-

duration A : 3.00

Starting test

Rated speed rpm : 100

Current A : 1.80

#### **ADJUSTMENT**

control lever position degree : 50.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 290

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.04.96 Edition Test oil : ISO 4113

Combination No. : 0 402 640 804

Injection pump

Pump designation : PE12P120A320LS7807

EP type number : 0 412 620 806

Governor

Governer design. : RQV350...1050PA842

Governer no. : 0 421 813 587

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : OM 444 A Motor

Power KW : 390.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 160 Tolerance l/h: + 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

Prestroke mm Tolerance mm : 5.25 : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

: 12-1-5-9-8 Firing order

: - 3- 4- 11- 10 : - 2- 6- 7

: 0-45-60-105-120 Phasing

: -165-180-225-240 : -285-300-345

Tolerance : ← 0.50

Check

tolerance °NW : +- 0.50

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 13.60

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 200.0

	+ Rated speed rpm : 1150
Tolerance cm3/1000 strokes : +- 1.0	Rack travel in mm: 16.50 Tolerance mm: + 1.30
Check tolerance cm3/1000s. : +- 4.0	THE LOAD OF THERM AT THE LOAD STOP
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 5.0	Rated speed rpm : 600 Aneroid pressure
Check tolerance	+ hPa : 660 + Del. quantity
cm3/1000s. : 9.0	cm3/1000 strokes : 200.0 Tolerance
Rated speed rpm : 350	+ cm3/1000 strokes : +- 1.0 + Check tolerance
Rack travel in mm : 5.55 Tolerance mm : + 0.15	+ cm3/1000s. : + 4.0 + Spreed
Del. quantity cm3/1000 strokes : 19.0	Tolerance 5.0
Tolerance cm3/1000 strokes : +- 3.0	+ Check tolerance + cm3/1000s. : 9.0
Check tolerance cm3/1000s. : + 4.5	†
Spreed Tolerance	CONTROL LEVER
cm3/1000 strokes : 8.0 Check tolerance	t control lever
cm3/1000s. : 12.0	position degree : 63.0 tolerance degree : + 4.0
	T totalite degree . 4.0
(B) SETTING OF INJECTION PUMP	RATED SPEED
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED : 11.00
	RATED SPEED
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20  Rated speed rpm : 700	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20  Rated speed rpm : 700 guide sleeve guide sleeve	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20  Rated speed rpm : 700 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.20	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300  LOW IDLE  control lever position degree : 14.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20  Rated speed rpm : 700 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.20  Rated speed rpm : 7.00 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.20  Rated speed rpm : 1100 guide sleeve	rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300  LOW IDLE  control lever position degree : 14.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : + 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : + 0.20  Rated speed rpm : 700 guide sleeve travel mm : 4.20 Tolerance mm : + 0.20  Rated speed rpm : 1100 guide sleeve travel mm : 1100 guide sleeve travel mm : 7.00	RATED SPEED  rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300  LOW IDLE  control lever position degree : 14.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 350 guide sleeve travel mm : 2.00 Tolerance mm : +- 0.10  Rated speed rpm : 1200 guide sleeve travel mm : 8.50 Tolerance mm : +- 0.20  Rated speed rpm : 700 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.20  Rated speed rpm : 1100 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.20  Rated speed rpm : 1100 guide sleeve	rack travel mm : 11.00 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1170 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300  LOW IDLE  control lever position degree : 14.0 tolerance degree : + 4.0

Rated speed rpm	: 250		Aneroid pressure		
CRT mm min.	. > 7.10	+ !	nPa Rated speed rpm	: 1100	D .
द्रा साम ताराः	. > 7.10	Ī	Rated speed rpm Del. quantity	: 1000	IJ
Rated speed rpm	: 500	+ 6	m3/1000 strokes	: 173	2.0
		+ 1	Tolerance		
TORQUE CONTROL		- † ;	cm3/1000 strokes	: +- (	2.0
TORGOL CONTROL		I a	Check tolerance cm3/1000s.	: +- 5	5.0
Rated speed rpm	: 600		Spreed		
rack travel mm Tolerance mm	: 13.60		Tolerance	,	
loterance mm	: + 0.10		cm3/1000 strokes Check tolerance		3.U
Rated speed rom	: 1050		m3/1000s.		2.0
rack travel mm	: 12.10	+			
Rated speed rpm rack travel mm Tolerance mm	: +- 0.10		Ineroid pressure		
Rated speed rpm	• 075		iPa Rated speed rpm	: 1100	
rack travel mm	: 12.70		Pel. quantity	. //	,
rack travel mm Tolerance mm	: +- 0.10	+ 6	m3/1000 strokes	: 206	5.0
			olerance		
Rated speed rpm	: 875 • 17.70		m3/1000 strokes theck tolerance	: +- 2	2.0
rack travel mm Tolerance mm	: +- 0.10	I 6	m3/1000s.	: +- 9	5.0
	•		preed	•	
Rated speed rpm	: 750		olerance		
Rated speed rpm rack travel mm Tolerance mm	: 13.60		m3/1000 strokes heck tolerance		ร.บ
roterance nun	; <del></del> 0, 10	1 6	m3/1000s.	: 12	2.0
	<del></del>	<del>-</del> +			
ANEROID/ALTITUDE			neroid pressure	4405	
COMPENSATOR TEST			Pa Nated speed rpm	: 1100	
			el. quantity	• 1000	,
		+ c	m3/1000 strokes	: 152	2.0
MEASUREMENT			olerance		
Pressure hPa	: 350		m3/1000 strokes heck tolerance	: +-	ί.υ
rack travel mm	· -2.10		m3/1000s.	: +- 5	5.0
Tolerance mm		+ s	preed		
	500		olerance	•	
Pressure hPa rack travel mm	: 500 : -0.60		m3/1000 strokes heck tolerance	: 8	3.0
Tolerance mm	: +- 0.10		m3/1000s.	: 12	2.0
		+		_	
AT ALT ALT			neroid pressure		
START CUT-OUT			Pa ated speed rpm	500	- 1
Rated speed rpm	: > 100		el. quantity	. ,	•
Rated speed rpm		+ c	m3/1000 strokes	: 137	.0
<b>~</b> ! !			olerance		_
Check speed 1/min	: > 80		m3/1000 strokes heck tolerance	: +- 1	.0
Speed 1/mmn Check	. > 00		m3/1000s.	: +- 4	.0
speed 1/min	: < 290	+ s ₁	preed	· '	
•		+ T	olerance	4	. ~
					.0
ENGI NELTUEDO CUA	DACTEDISTICS		m3/1000 strokes	: 8	
FUEL DELIVERY CHA	RACTERISTICS	+ c	m3/1000 strokes heck tolerance m3/1000s.		.0

# BREAKAWAY

Rack travel in mm: 11.00
Rated speed rpm: 1095
Tolerance 1/min: +- 5

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 230.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

# LOW IDLE

Rated speed rpm 350 5.55 rack travel mm Tolerance mm 0.15 Del. quantity cm3/1000 strokes : 19.0 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.03.96 Test oil : ISO 4113

Combination No. : 0 402 646 627

Injection pump

Pump designation : PE6P12OA32ORS7297

: -10

EP type number : 0 412 626 921

Governor

Governer design. : RQV350...1100PA795

: -12

Governer no. : 0 421 813 914

Cust. part No. : 1340653

Customer—spec. information Customer : SCANIA Motor : DSC 909

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 210 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

CHECK

tolerance mm : + 0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

- 4

Phasing : 0-60-120-180-240

: -300_

Tolerance  $: \leftarrow 0.30$ 

Check

tolerance "NW :  $\leftarrow$  0.50

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.25 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 205.0

Talanasa	•
Tolerance cm3/1000 strokes : +- 1.0	†
CHOY (GOO SELOKES . + 1.0	CONTROL LEVER
Check tolerance	T COMMON ELVEN
cm3/1000s. : +- 4.0	+ control lever
	+ position degree : 47.0
Spreed	+ tolerance degree : +- 4.0
Tolerance	+
cm3/1000 strokes : 8.0	+ control lever
	+ position degree : 106.0
Check tolerance	+ tolerance degree : +- 4.0
cm3/1000s. : 12.0	+
5.1	+ RATED SPEED
Rated speed rpm : 250	12.20
Double description on a 1 00	+ rack travel mm : 12.20
Rack travel in mm : 4.90 Tolerance mm : +- 0.30	+ Rated speed rpm : 1145 + Tolerance 1/min : + 5
Tolerance mm : +- 0.30 Del. quantity	† Tolerance 1/min : +- 5
cm3/1000 strokes : 26.0	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1270
cm3/1000 strokes : + 3.0	+ Tolerance 1/min : +- 15
Check tolerance	Total and training
cm3/1000s. : +- 6.0	+ rack travel mm : 0.50
Spreed	+ Tolerance mm : +- 0.50
Tolerance	+ Rated speed rpm : 1400
cm3/1000 strokes : 4.0	+
Check tolerance	+
cm3/1000s. : 8.0	
	+ LOW IDLE
	<b>\</b>
	+
(B) SETTING OF INJECTION PUMP	‡
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever
	+ position degree : 68.0
WITH GOVERNOR	+ position degree : 68.0 + tolerance degree : +- 4.0 +
	position degree : 68.0 tolerance degree : +- 4.0 control lever
GUIDE SLEEVE POSITION	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0
WITH GOVERNOR	position degree : 68.0 tolerance degree : +- 4.0 control lever
GUIDE SLEEVE POSITION Rated speed rpm : 1300	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00  Tolerance mm : + 1.30	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.90
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00  Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00  Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.90
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00  Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700  Aneroid pressure	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : -	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10 Rated speed rpm : 150 craft mm min. : > 6.40
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10 Rated speed rpm : 150 craft mm min. : > 6.40
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150  CRT mm min. : > 6.40  Rated speed rpm : 250
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 68.0 tolerance degree : +- 4.0 control lever position degree : 11.0 tolerance degree : +- 4.0 Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10 Rated speed rpm : 150 craft mm min. : > 6.40
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150  CRT mm min. :> 6.40  Rated speed rpm : 250  TORQUE CONTROL
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150  CRT mm min. : > 6.40  Rated speed rpm : 250
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150  CRT mm min. :> 6.40  Rated speed rpm : 250  TORQUE CONTROL  Rated speed rpm : 1100
GUIDE SLEEVE POSITION  Rated speed rpm : 1300  Rack travel in mm : 12.00 Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 700 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 205.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance	position degree : 68.0 tolerance degree : +- 4.0  control lever position degree : 11.0 tolerance degree : +- 4.0  Testing:  Rated speed rpm : 250 rack travel mm : 4.90 Tolerance mm : +- 0.10  Rated speed rpm : 150  CRT mm min. :> 6.40  Rated speed rpm : 250  TORQUE CONTROL  Rated speed rpm : 1100 rack travel mm : 13.25

ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 13.25 : +- , 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 11.00 : + 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 470 : 11.95 : + 0.15
	: 670
rack travel mm	: 670 : 12.85 : + 0.05
Pressure hPa rack travel mm Tolerance mm  FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 12.85 : + 0.05

Rated speed rpm : 1145 Tolerance 1/min : + 5 STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 20.50 : +- 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 265.0 Tolerance cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : + 24.0 LOW IDLE 250 Rated speed rpm : 4.90 rack travel mm Tolerance mm : +- 0.30 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance

End of test specification sheet

8.0

cm3/1000s.

BREAKAWAY

Rack travel in mm:

12.20

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Combination No. : 0 402 646 666

Injection pump

Pump designation : PE6P120A320LS7278 EP type number : 0 412 626 880

Governor

Governer design. : RQV350...900PA1273 : 0 421 814 174

Governer no.

Cust. part No.

Customer-spec. information Customer : LIAZ : M640D Motor : 300.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 125 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

: 4.50 Prestroke mm : + - 0.05Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

: + 0.30Tolerance

Check

tolerance *NW : + 0.50

Start of delivery mark

: +- 0.50Tolerance

Check

tolerance "NW : + 0.75

Barrel no. 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 15.50

: +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 294.0	guide sleeve travel mm : 10.00 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1090 guide sleeve
Check tolerance cm3/1000s. : + 4.0	travel mm : 11.50 Tolerance mm : + 0.50
Spreed Tolerance cm3/1000 strokes : 8.0	GUIDE SLEEVE POSITION
Check tolerance	Rated speed rpm : 975
cm3/1000s. : 12.0	Rack travel in mm : 14.50 Tolerance mm : +- 2.00
Rated speed rpm : 325	
Rack travel in mm: 5.30 Tolerance mm: +- 0.30	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 24.0	Rated speed rpm : 900 Aneroid pressure
Tolerance cm3/1000 strokes : + 3.0	hPa : 1500 Del. quantity
Check tolerance cm3/1000s. : +- 6.0 cm3/1000s.	cm3/1000 strokes : 294.0 Tolerance cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes : 5.0	Check tolerance cm3/1000s. : +- 4.0
Check tolerance cm3/1000s. : 9.0	Spreed Tolerance
	cm3/1000 strokes : 8.0 Check tolerance
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000s. : 12.0
GUIDE SLEEVE TRAVEL	CONTROL LEVER
Rated speed rpm : 325 guide sleeve travel mm : 1.50	control lever position degree : 66.0 tolerance degree : + 4.0
Tolerance mm : +- 0.20	control lever position degree : 120.0
guide sleeve travel mm : 8.02	tolerance degree : +- 4.0
Tolerance mm : +- 0.15	RATED SPEED
Rated speed rpm : 810 + guide sleeve + travel mm : 6.01 +	rack travel mm : 14.50 Rated speed rpm : 945 Tolerance 1/min : +- 5
Tolerance mm : +- 0.25	rack travel mm : 4.00
Rated speed rpm : 540 + guide sleeve +	Rated speed rpm : 1005 Tolerance 1/min : +- 15
travel mm : 3.71 + Tolerance mm : + 0.25 +	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm : 1017	Tolerance mm : +- 0.50 Rated speed rpm : 1150

LOW IDLE	
control lever position degree tolerance degree	: 65.0 : + 4.0
control lever position degree tolerance degree	: 11.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 5.30 : +- 0.10
Rated speed rpm	: 225
CRT mm min.	: > 7.00
Rated speed rpm	: 390
***************************************	
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 900 : 15.50 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.50 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 15.50 : + 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : 9.20 : + 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm	: 250 : 10.60

Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: ← 0.25 : 540 : 13.90 : ← 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - 500 : 169.0 : + 2.0 : + 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 14.50 : 945 : + 5
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 310.0 : +- 20.0 : +- 24.0
LOW IDLE  Rated speed rpm rack travel mm Tolerance mm	: 325 : 5.30 : + 0.30

Del. quantity		
cm3/1000 strokes	:	24.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	5.0
Check tolerance		
cm3/1000s.	:	9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 12.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 745

Injection pump

Pump designation : PE6P120A320LS7872 EP type number : 0 412 626 912

Governor

Governer design. : RQV300...1050PA1241K

Governer no. : 0 421 815 476

Cust. part No. : 80165-6-13

Customer-spec. information

Customer : KHD

: BF6M1015C Motor Power KW : 300.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 105 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

F01

: 208.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: -300

: 0-60-120-180-240 Phasing

Tolerance : +- 0.30

Check

tolerance 'NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm; 14.40 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 350.0

Tolerance : +- 1.0	<u> </u>
	+ GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1205
Spreed Tolerance cm3/1000 strokes : 8.0	Rack travel in mm: 13.40 Tolerance mm: + 1.30
Check tolerance cm3/1000s. : 12.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	+ Rated speed rpm : 1050 + Aneroid pressure + hPa : 1700
Rack travel in mm : 4.90 Tolerance mm : + 0.20	Del. quantity cm3/1000 strokes : 350.0
Del. quantity cm3/1000 strokes : 23.0 Tolerance	Tolerance cm3/1000 strokes : + 1.0 check tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	cm3/1000s. : + 4.0 + Spreed
cm3/1000s. : +- 6.0 Spreed Tolerance	Tolerance cm3/1000 strokes : 8.0 Check tolerance
cm3/1000 strokes : 8.0 Check tolerance	cm3/1000s. : 12.0
cm3/1000s. : 12.0	†
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control Lever  control lever  position degree : 121.0  tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 300 guide sleeve travel mm : 2.74 Tolerance mm : + 0.20	rack travel mm : 13.40 Rated speed rpm : 1085 Tolerance 1/min : +- 5
Rated speed rpm : 1107 guide sleeve travel mm : 9.89 Tolerance mm : + 0.15	rack travel mm : 4.00 Rated speed rpm : 1220 Tolerance 1/min : + 15
Rated speed rpm : 772 guide sleeve travel mm : 6.82	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1300
Tolerance mm : +- 0.25	
Rated speed rpm : 440 guide sleeve	+ LOW IDLE
travel mm : 3.88 Tolerance mm : + 0.25	control lever position degree : 76.0
Rated speed rpm : 1380 guide sleeve	tolerance degree : +- 4.0
travel mm : 13.50 Tolerance mm : +- 0.50	Testing:

F02

Rated speed rpm rack travel mm Tolerance mm Rated speed rpm CRT mm min. Rated speed rpm	: +- 0.10 : 200 : > 7.10	Aneroid pressure  hPa : 1700  Rated speed rpm : 600  bel. quantity  cm3/1000 strokes : 353.0  Tolerance  cm3/1000 strokes : +- 3.0  Check tolerance  cm3/1000s. : +- 6.0
TORQUE CONTROL	. 333	l l
Rated speed rpm	: 1050 : 14.40	Rated speed rpm : 400  Del. quantity  cm3/1000 strokes : 230.0
rack travel mm Tolerance mm		Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.30 : + 0.10	Check tolerance cm3/1000s. : +- 4.0 Spreed
Rated speed rpm rack travel mm Tolerance mm	: 850 : 13.80 : +- 0.20	Aneroid pressure hPa : - Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 230.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. : 14.0
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING		Rack travel in mm: 13.40 Rated speed rpm: 1085 Tolerance 1/min: +- 5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1700	STARTING FUEL DELIVERY
MEASUREMENT		Rated speed rpm : 100
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 1050	rack travel mm : 8.70 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 130.0 Tolerance
Rated speed rpm	: 1050	- cm3/1000 strokes : +- 15.0 - Check tolerance - cm3/1000s. : +- 19.0
Pressure hPa rack travel mm Tolerance mm	: 9.70	
Pressure hPa rack travel mm Tolerance mm	: 830 : 12.40 : + 0.05	LOW IDLE  Rated speed rpm : 300  rack travel mm : 4.90  Tolerance mm : + 0.20  Del. quantity
FUEL DELIVERY CHA	RACTERISTICS	

Check tolerance cm3/1000s. : +- 6.0

Spreed

Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. :

8.0

12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 01.08.94 Test oil : ISO 4113

Combination No. : 0 402 646 797

Injection pump

Pump designation : PE6P12OA32OLS7858 EP type number : 0 412 626 875

Governor

Governer design. : RQ300/1050PA1030-13 Governer no. : 0 421 801 730

Cust. part No. : 0230748902

Customer-spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 180.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: -300-360 Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : á

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 173.0

JOO strokes : 173.0

Tolerance	+	<b>.</b>
cm3/1000 strokes	: +- 1.0 +	Rated speed rpm : 1280 guide sleeve
Check tolerance cm3/1000s.	: + 4.0	travel mm : 11.50 Tolerance mm : +- 0.50
Spreed	**************************************	
Tolerance cm3/1000 strokes	; 5.0	GUIDE SLEEVE POSITION  Rated speed rpm : 600
Check tolerance cm3/1000s.	: 9.0	Rack travel in mm : 20.00
Rated speed rpm	: 300	Tolerance mm : +- 0.80
	+	
Rack travel in ma Tolerance mm	n: 5.20 + :+ 0.30 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 19.0	Rated speed rpm : 1050 Aneroid pressure
Tolerance cm3/1000 strokes	: +- 3.0 +	hPa : 700 Del. quantity
Check tolerance	: + 6.0	cm3/1000 strokes : 173.0
cm3/1000s. Spreed	; == 0.0	Tolerance cm3/1000 strokes : +- 1.0
Tolerance cm3/1000 strokes	: 6.0	Check tolerance cm3/1000s. : +- 4.0
Check tolerance cm3/1000s.	+	Spreed Tolerance
cm3/1000s.	: 10.0	cm3/1000 strokes : 5.0
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	Check tolerance cm3/1000S. : 9.0
GUIDE SLEEVE TRAV	/EL +	CONTROL LEVER
Rated speed rpm	: 300	control lever
guide sleeve travel mm	: 2.48	position degree : 91.0 tolerance degree : +- 4.0
Tolerance mm	: + 0.10	RATED SPEED
Rated speed rpm	: 1108	
guide sleeve travel mm	: 6.39	rack travel mm : 10.25 Rated speed rpm : 1098
Tolerance mm	: + 0.10 ±	Tolerance 1/min : + 8
Rated speed rpm	: 1050	rack travel mm : 4.00 Rated speed rpm : 1175
guide sleeve travel mm	: 6.00	Tolerance 1/min : +- 15
Tolerance mm	: + 0.10	rack travel mm : 0.75
Rated speed rpm guide sleeve	: 392	Tolerance mm : +- 0.75 Rated speed rpm : 1300
travel mm Tolerance mm	: 4.64 : +- 0.10	
Rated speed rpm	: 490	LOW IDLE
guide sleeve travel mm	: 6.00	
Tolerance mm	+ 0.10	

control loven		
control lever position degree tolerance degree	: 74.0 : +- 4.0	START CUT-OUT
Testing:		Rated speed rpm : > 100 Rated speed rpm : < 220
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : + 0.10	Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 700 Rated speed rpm : 550 Del. quantity cm3/1000 strokes : 164.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
rack travel mm Rated speed rpm	: 2.00	speed 1/min : < 240
Tolerance 1/min	: +- 20	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	Aneroid pressure hPa : 700
CRT mm min.	: > 7.60	Rated speed rpm : 550  Del. quantity
TORQUE CONTROL		
Rated speed rpm rack travel mm	: 1050 : 11.25	Check tolerance cm3/1000s. : +- 5.0
Tolerance mm	: +- 0.05	Spreed Tolerance
Rated speed rpm rack travel mm Tolerance mm	: 550 : 11.25	- cm3/1000 strokes : 8.0 - Check tolerance
Tolerance mm	: + 0.05	<del>†</del>
ANEROID/ALTITUDE		
COMPENSATOR TEST		Rated speed rpm : 500 Del. quantity
SETTING		+ cm3/1000 strokes : 133.0 + Tolerance
Rated speed rpm	: 400	+ cm3/1000 strokes : + 1.0 + Check tolerance
Pressure hPa rack travel mm	: 11.25	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
Tolerance mm MEASUREMENT	; — 0.03	- cm3/1000 strokes : 8.0 - Check tolerance
Pressure hPa	•	cm3/1000s. : 12.0
Rated speed rpm	: 400	
rack travel mm Tolerance mm	: 10.30 : + 0.15	+ BREAKAWAY
Rated speed rpm	: 400	Rack travel in mm : 10.25 Rated speed rpm : 1098
Pressure hPa rack travel mm Tolerance mm	: 250 : 10.90 : +- 0.10	Tolerance 1/min : +- 8
Pressure hPa rack travel mm	: 200 : 10.55	STARTING FUEL DELIVERY
Tolerance mm	: + 0.10	Rated speed rpm : 100 Del. quantity
		+ cm3/1000 strokes : 135.0

Tolerance		
cm3/1000 strokes	: +-	15.0
Check tolerance		
cm3/1000s.	: +-	19.0

# LOW IDLE

Rated speed rpm 300 5.20 rack travel mm Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 19.0 Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.04.96 Test oil : ISO 4113

Combination No. : 0 402 648 920

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RQV350...1050PA870

: -16

Governer no. : 0 421 813 953

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 2.5

x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

#### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 14.30

Rack travel in mm : 14.30 Tolerance mm : + 0.10

Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 257.5  Tolerance	guide sleeve travel mm : 10.05 Tolerance mm : +- 0.25
cm3/1000 strokes : + 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : +- 4.0	Rated speed rpm : 1125
Spreed Tolerance cm3/1000 strokes : 5.0	Rack travel in mm : 17.25 Tolerance mm : + 0.75
Check tolerance cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 350	Rated speed rpm : 600 Aneroid pressure hPa : 1100
Rack travel in mm: 5.80 Tolerance mm: +- 0.30 Del. quantity	Del. quantity cm3/1000 strokes : 257.5 Tolerance
cm3/1000 strokes : 19.0 + Tolerance +	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : +- 3.0 +- Check tolerance +- 6.0 +-	cm3/1000s. : +- 4.0 Spreed Tolerance
Spreed + Tolerance	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 6.0 + Check tolerance	cm3/1000s. : 9.0
cm3/1000s. : 10.0	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 119.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 350 guide sleeve travel mm : 1.55 Tolerance mm : + 0.25	rack travel mm : 14.30 Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm : 1108 + guide sleeve	rack travel mm : 4.00 Rated speed rpm : 1195
travel mm : 8.05 Tolerance mm : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm : 570 guide sleeve	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1300
travel mm : 3.55 Tolerance mm : + 0.25	
Rated speed rpm : 900 guide sleeve	LOW IDLE
travel mm : 5.65 Tolerance mm : + 0.25	control lever position degree : 67.0
Rated speed rpm : 1204	tolerance degree : + 4.0
m4.6	

Testing:	750	+ Check + speed 1/min : < 290
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80 : +- 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 250	+ Aneroid pressure + hPa : 1800 + Rated speed rpm : 1050
CRT mm min.	: > 6.60	Del. quantity + cm3/1000 strokes : 272.0
Rated speed rpm	: 450	Tolerance + cm3/1000 strokes : +- 1.5
TORQUE CONTROL		Check tolerance cm3/1000s. : +- 4.5
Rated speed rpm rack travel mm Tolerance mm	: 14.30	Aneroid pressure hPa : 1800 Rated speed rpm : 800 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 15.30	cm3/1000 strokes : 274.0 Tolerance cm3/1000 strokes : +- 2.0
Rated speed rpm rack travel mm Tolerance mm		Check tolerance cm3/1000s. : +- 5.0  Aneroid pressure hPa : -
ANEROID/ALTITUDE COMPENSATOR TEST		Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 130.0  Tolerance  cm3/1000 strokes : +- 1.0  Check tolerance
MEASUREMENT		cm3/1000s. : + 4.0
Pressure hPa rack travel mm Tolerance mm	: 290 : -5.50 : +- 0.05	BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 780 : −1.50 : ← 0.10	Rack travel in mm : 14.30 Rated speed rpm : 1095 Tolerance 1/min : + 5
Pressure hPa rack travel mm Tolerance mm	: 1450 : 0.30 : +- 0.05	STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 1550 : 0.70 : + 0.10	Rated speed rpm : 100  Del. quantity  cm3/1000 strokes : 270.0  Tolerance  cm3/1000 strokes : + 10.0
START CUT-OUT		Check tolerance cm3/1000s. : +- 14.0
Rated speed rpm Rated speed rpm		14.0
Check speed 1/min	: > 80	LOW IDLE

Rated speed rpm	: 350
rack travel mm	: 5.80
Tolerance mm	: <b>+</b> 0.30
Del. quantity	
cm3/1000 strokes	: 19.0
Tolerance	
cm3/1000 strokes	: +- 3.0
Check tolerance	
cm3/1000s.	: <del>+-</del> 6.0
Spreed	
Tolerance	
cm3/1000 strokes	: 6.0
Check tolerance	
cm3/1000s.	: 10.0
,	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16,04,96 Edition : ISO 4113 Test oil

Combination No. : 0 402 736 888

Injection pump

Pump designation : PES6P120A120RS7390

EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1237K

: 0 421 815 475 Governer no.

Cust. part No. : 3283278

Customer-spec. information Customer : CUMMINS : 6CTAA Motor Power KW : 162.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h min. l/h : 90 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

600 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Tolerance bar : + 26.0

Prestroke mm : +-3.30 : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 : + 0.30

Tolerance

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.70 Tolerance : + 0.50

Check

tolerance "NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.60

Tolerance mm : + 0.05	Poted anniel ann 1700
Del. quantity	+ Rated speed rpm : 1380 + guide sleeve
cm3/1000 strokes : 164.0	travel mm : 13.50
	+ Tolerance mm : +- 0.50
Tolerance	+
cm3/1000 strokes : +- 1.0	CUIDE OF EDITE DOOTTYON
Check tolerance	+ GUIDE SLEEVE POSITION
cm3/1000s. : +- 4.0	Rated speed rpm : 1200
	+
Spreed	Rack travel in mm : 11.60
Tolerance cm3/1000 strokes : 5.0	Tolerance mm : +- 1.50
cms/fudu strokes : 5.0	
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	+
Detect 750	Rated speed rpm : 1100
Rated speed rpm : 350	+ Aneroid pressure + hPa : 1500
Rack travel in mm: 4.80	Del. quantity
Tolerance mm : + 0.30	cm3/1000 strokes : 164.0
Del. quantity -	Tolerance
cm3/1000 strokes : 18.0	cm3/1000 strokes : +- 1.0
Tolerance - cm3/1000 strokes : +- 3.0 -	+ Check tolerance + cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 5.0	Tolerance
Spreed -	cm3/1000 strokes : 5.0
Tolerance - cm3/1000 strokes : 7.0 -	+ Check tolerance + cm3/1000s. : 9.0
cm3/1000 strokes : 7.0 - Check tolerance -	+ cm3/1000s. : 9.0
cm3/1000s. : 11.0	<u> </u>
· -	
(D) OFFITAIO OF TALIFOTTAN DUMP	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	t - control lever
WITH GOVERNOR	position degree : 69.0
	tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	<del> </del>
Dated arred may 1 750	control lever
Rated speed rpm : 350 - guide sleeve -	position degree : 123.0 tolerance degree : +- 4.0
travel mm : 1.93	toterance degree 4.0
Tolerance mm : + 0.20	RATED SPEED
Data diagnosida non a data	
Rated speed rpm : 1159 - guide sleeve -	rack travel mm : 11.60 Rated speed rpm : 1145
travel mm : 10.27	Tolerance 1/min : + 5
Tolerance mm : + 0.15	-
	rack travel mm : 4.00
Rated speed rpm : 710	Rated speed rpm : 1230
guide sleeve - travel mm : 5.79 -	Tolerance 1/min : +- 15
Tolerance mm : + 0.25	rack travel mm : 0.50
Ġ	Tolerance mm : +- 0.50
Rated speed rpm : 420	Rated speed rpm : 1350
guide sleeve + 4.28 + 4.28	-
travel mm : 4.28 - Tolerance mm : +- 0.25 -	<u></u>
TO COT GITTED THAT	

LOW IDLE	
control lever position degree tolerance degree	: 73.0 : ← 4.0
control lever position degree tolerance degree	: 21.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm	: 250
CRT mm min.	: > 7.70
Rated speed rpm	: 350
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 12.60 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.30 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 900 : 12.35 : +- 0.15
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.00 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1500 : 12.60 : + 0.05
MEASUREMENT	
Pressure hPa	: – : 1100

rack travel mm Tolerance mm	: 10.25 : +- 0.20	
	1100	
Rated speed rpm	: 1100	
Pressure hPa	: 170	
rack travel mm	: 11.10	
Tolerance mm	: +- 0.20	
Pressure hPa	: 330	
rack travel mm	: 12.10	
Tolerance mm	: <del>+</del> 0.05	
START CUT-OUT	·	
Pated speed rom	: > 100	
Rated speed rpm Rated speed rpm	: < 280	
Check speed 1/min	: > 80	
Check	. > 00	
speed 1/min	700	
FUEL DELIVERY CHA		-
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	RACTERISTICS: 1500	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity	RACTERISTICS : 1500 : 750	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm	RACTERISTICS : 1500 : 750	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 750 : 155.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1500 : 750 : 155.0 : + 3.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 1500 : 750 : 155.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: 1500 : 750 : 155.0 : + 3.0 : + 6.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 1500 : 750 : 155.0 : + 3.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 750 : 155.0 : + 3.0 : + 6.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0 : 16.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000s. Aneroid pressure hPa Rated speed rpm Del. quantity	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0 : 16.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0 : 16.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes Tolerance cm3/1000 strokes	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0 : 16.0	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 155.0 : + 3.0 : + 6.0 : 12.0 : 16.0 : 500 : 107.0	

Rack travel in mm : 11.60
Rated speed rpm : 1145
Tolerance 1/min : + 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 180.0
Tolerance
cm3/1000 strokes : +- 20.0
Check tolerance
cm3/1000s. : +- 24.0

# LOW IDLE

Rated speed rpm 350 4.80 rack travel mm 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance 7.0 cm3/1000 strokes : Check tolerance cm3/1000s. 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 16.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 736 889

Injection pump

Pump designation : PES6P120A120RS7390

EP type number : 0 412 726 945

Governor

Governer design. : RQV350...1100PA1244K

Governer no. : 0 421 815 477

Cust. part No. : 3283279

Customer-spec. information Customer : CUMMINS Motor : 6CTAA Power KW : 179.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

90 min. l/h : 90 Tolerance l/h :  $\div$  10.0 min. L/h

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.50

Start of delivery blocking

*NW after s.o.d. : 7.70 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.00

Tolerance mm : +- 0.05	Date of the state of the 2700
Del. quantity	Rated speed rpm : 1380 guide sleeve
cm3/1000 strokes : 173.0	travel mm : 13.50 Tolerance mm : +- 0.50
Tolerance cm3/1000 strokes : +- 1.0	GUIDE SLEEVE POSITION
Check tolerance cm3/1000s. : + 4.0	
	Rated speed rpm : 1195
Spreed +	Rack travel in mm : 12.00 Tolerance mm : +- 1.30
cm3/1000 strokes : 5.0	
Check tolerance cm3/1000s. 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
+	Rated speed rpm : 1100
Rated speed rpm : 350	Aneroid pressure hPa : 1500
Rack travel in mm: 4.60 + Tolerance mm: +- 0.30 +	Del. quantity cm3/1000 strokes : 173.0
Del. quantity	Tolerance
cm3/1000 strokes : 18.0 +	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : + 3.0 + Check tolerance	cm3/1000S. : +- 4.0 Spreed
cm3/1000s. : + 5.0 +	Tolerance
Spreed + Tolerance +	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes : 7.0 + Check tolerance	cm3/1000s. : 9.0
cm3/1000s. : 11.0	
<del>+</del>	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever
+	position degree : 68.0 tolerance degree : + 4.0
GUIDE SLEEVE TRAVEL	
Rated speed rpm : 350	control lever position degree : 122.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 1.93 + Tolerance mm : +- 0.20 +	RATED SPEED
+	
Rated speed rpm : 1159 + guide sleeve +	rack travel mm : 12.00 Rated speed rpm : 1145
travel mm : 10.27 +	Tolerance 1/min : + 5
+	rack travel mm : 4.00
Rated speed rpm : 710 + guide sleeve +	Rated speed rpm : 1230 Tolerance 1/min : +- 15
travel mm : 5.79	
Tolerance mm : + 0.25	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm : 420 + guide sleeve +	Rated speed rpm : 1350
travel mm : 4.28	
Tolerance mm : +- 0.25 +	

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : ← 4.0
control lever position degree tolerance degree	: 20.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.60 : + 0.10
Rated speed rpm	: 250
CRT mm min.	: > 7.50
Rated speed rpm	: 350
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1100 : 13.00 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.15 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : 1500 : 13.20 : +- 0.05
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 700 : 10.20 : + 0.20
Rated speed rpm	: 700

Pressure hPa rack travel mm Tolerance mm	: 140 : 11.10 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 300 : 12.60 : + 0.05
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 290
Check speed 1/min	: > 80
Check speed 1/min	: < 300
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 1500 : 700
Del. quantity cm3/1000 strokes	
Tolerance	
cm3/1000 strokes Check tolerance	: <del>+</del> 3.0
cm3/10005. Spreed	: + 6.0
Tolerance	0.0
cm3/1000 strokes Check tolerance	
cm3/1000s.	: 12.0
Aneroid pressure	•
Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 109.0
Tolerance cm3/1000 strokes	: + 2.0
Check tolerance cm3/1000s.	: + 4.0
Cin37 10005.	· · · 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 12.00 : 1145 : + 5
STARTING FUEL DEL	IVERY

Rated speed rpm	: 100
rack travel mm	: 20.50
Tolerance mm	: <b>←</b> 0.50
Del. quantity	
cm3/1000 strokes	: 180.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 20.0
Check tolerance	
cm3/1000S.	: +- 24.0

# LOW IDLE

350 Rated speed rpm 4.60 rack travel mm Tolerance mm 0.30 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes 7.0 Check tolerance cm3/1000s. 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Combination No. : 0 402 736 892

Injection pump

Pump designation : PES6P12OA12ORS7400

EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1100PA1244

: -1K

Governer no. : 0 421 815 488

Cust. part No. : 3282610

Customer—spec. information
Customer : CUMMINS
Motor : 6CTAA
Power KW : 221.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 100 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length min : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.30 Tolerance mm : +- 0.05

Check tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  : + 0.50

Start of delivery blocking

*NW after s.o.d. : 7.70 Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 14.60

Tolerance mm : + 0.05	Rated speed rpm : 1380
Del. quantity cm3/1000 strokes : 209.0	guide sleeve travel mm : 13.50
Tolerance cm3/1000 strokes : + 1.0	Tolerance mm : +- 0.50
Check tolerance	GUIDE SLEEVE POSITION
cm3/1000s. : + 4.0	Rated speed rpm : 1210
Spreed Tolerance cm3/1000 strokes : 5.0	Rack travel in mm : 13.60 Tolerance mm : + 2.00
Check tolerance cm3/1000S. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 350	Rated speed rpm : 1100 Aneroid pressure
Rack travel in mm: 5.10	hPa : 1500 Del. quantity
Tolerance mm : +- 0.30 +- Del. quantity +-	cm3/1000 strokes : 209.0 Tolerance
cm3/1000 strokes : 25.0	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000 strokes : + 3.0 + Check tolerance +	cm3/1000s. : +- 4.0 Spreed
cm3/1000s. : +- 5.0 +- Spreed	Tolerance cm3/1000 strokes : 5.0
Tolerance + cm3/1000 strokes : 7.0 +	Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 11.0	
	CONTROL LEVER
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever
WITH GOVERNOR	position degree : 66.0
GUIDE SLEEVE TRAVEL	tolerance degree : + 4.0
Rated speed rpm : 350 +	control lever position degree : 120.0
guide sleeve +	tolerance degree : + 4.0
travel mm : 1.93 + Tolerance mm : + 0.20 +	RATED SPEED
Rated speed rpm : 1159	rack travel mm : 13.60
guide sleeve + travel mm : 10.28 +	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Tolerance mm : + 0.15	rack travel mm : 4.00
Rated speed rpm : 710 # guide sleeve	Rated speed rpm : 1245 Tolerance 1/min : + 15
travel mm : 5.80	
Tolerance mm : +- 0.25	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm : 430 full guide sleeve	Rated speed rpm : 1350
travel mm : 4.33 + Tolerance mm : + 0.25	

		1	rack travel mm	: 10.45
LOW IDLE		<del></del>	Tolerance mm	
		1	Rated speed rpm	: 1100
control lever position degree tolerance degree	: 73.0 : + 4.0	+	Pressure hPa rack travel mm Tolerance mm	• 13 20
control lever position degree tolerance degree	: 20.0 : +- 4.0	<b>T</b>	Pressure hPa rack travel mm Tolerance mm	: 240 : 11.20 : +- 0.05
Testing:		Ţ	START CUT-OUT	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : + 0.10	<del>-</del>	Rated speed rpm Rated speed rpm	: > 100 : < 290
Rated speed rpm		<del>-</del>	Check speed 1/min	: > 80
CRT mm min. Rated speed rpm		‡	Check speed 1/min	: < 300
			FUEL DELIVERY CHA	RACTERISTICS
TORQUE CONTROL		‡	Aneroid pressure	
Rated speed rpm rack travel mm Tolerance mm	: 14.60	<u>†</u>	hPa Rated speed rpm Del. quantity	
Rated speed rpm	: 750	+	cm3/1000 strokes Tolerance cm3/1000 strokes	: 198.0
rack travel mm Tolerance mm	: + 0.10	+	Check tolerance cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 14.50	† †	Spreed Tolerance cm3/1000 strokes	: 12.0
Rated speed rpm rack travel mm	: 14.10	‡	Check tolerance cm3/1000s.	: 16.0
Tolerance mm  ANEROID/ALTITUDE	: +- 0.15		Aneroid pressure hPa Rated speed rpm Del. quantity	: ÷ 500
COMPENSATOR TEST		+	cm3/1000 strokes Tolerance	
SETTING		‡	cm3/1000 strokes Check tolerance cm3/1000s.	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100 : 1500 : 14.60 : ← 0.05	† + +	BREAKAWAY	: +- 4.0
MEASUREMENT		‡	Rack travel in mm	
Pressure hPa Rated speed rpm	: 1100	† † †	Rated speed rpm Tolerance 1/min	

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity cm3/1000 strokes : 180.0 Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : +- 24.0

# LOW IDLE

350 Rated speed rpm rack travel mm 5.10 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s.5.0 Spreed Tolerance cm3/1000 strokes : 7.0 Check tolerance cm3/1000s. 11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.96 : ISO 4113 Test oil

Combination No. : 0 402 736 893

Injection pump

Pump designation : PES6P120A120RS7400 EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1100PA1244

: -2K

: 0 421 815 489 Governer no.

Cust. part No. : 3282609

Customer—spec. information : CUMMINS Customer Motor : 6CTAA : 206.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance *C 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. L/h 125 : +- 20.0 Tolerance l/h

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 : +- 1.5 Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : +-3.30 : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.50

Start of delivery blocking

"NW after s.o.d. : 7.70

Tolerance : + 0.50

Check

: +- 0.75 tolerance *NW

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Deal Americal Survey 47, 00	+ guide sleeve
Rack travel in mm: 14.80	travel mm : 4.70
Tolerance mm : +- 0.05	† Tolerance mm : + 0.25
	<b>†</b>
Del. quantity	+ Rated speed rpm : 1380
cm3/1000 strokes : 211.0	+ guide sleeve
	+ travel mm : 13.50
Tolerance	+ Tolerance mm : + 0.50
cm3/1000 strokes : + 1.0	+
	+
Check tolerance	+ GUIDE SLEEVE POSITION
cm3/1000s. : +- 4.0	+
	+ Rated speed rpm : 1215
Spreed	+
Tolerance	+ Rack travel in mm : 13.30
cm3/1000 strokes : 5.0	+ Tolerance mm : +- 2.00
	+
Check tolerance	
cm3/1000s. : 9.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rated speed rpm : 350	Rated speed rpm : 1050
THE SECOND FOR THE SECOND SECO	Aneroid pressure
Rack travel in mm: 5.10	+ hPa : 1500
Tolerance mm : +- 0.30	Del. quantity
Del. quantity	+ cm3/1000 strokes : 211.0
cm3/1000 strokes : 25.0	+ Tolerance
Tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000 strokes : +- 3.0	+ Check tolerance
Check tolerance	- cm3/1000s. : +- 4.0
cm3/1000s. : +- 5.0	+ Spreed
Spreed	† Tolerance
Tolerance 3.0	+ cm3/1000 strokes : 5.0
cm3/1000 strokes : 7.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : 9.0
cm3/1000s. : 11.0	†
	†
(B) SETTING OF INJECTION PUMP	+ CONTROL LEVER
WITH GOVERNOR	+
	+ control lever
	+ position degree : 66.0
GUIDE SLEEVE TRAVEL	+ tolerance degree : +- 4.0
	+
Rated speed rpm : 350	+ control lever
guide sleeve	+ position degree : 122.0
travel mm : 1.93	+ tolerance degree : + 4.0
Tolerance mm : +- 0.20	+
	+ RATED SPEED
Rated speed rpm : 1159	+
guide sleeve	+ rack travel mm : 13.80
travel mm : 10.28	+ Rated speed rpm : 1145
Tolerance mm : +- 0.15	+ Tolerance 1/min : + 5
TO SEE SEE SEE SEE SEE SEE SEE SEE SEE SE	
Rated speed rpm : 710	+ rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1245
travel mm : 5.79	+ Tolerance 1/min : +- 15
Tolerance mm : + 0.25	1 Total alloc 17 mill
TOTAL GUILD . TO 0.23	Track travel mm 1 0.50
Rated speed rpm : 500	+ Tolerance mm : +- 0.50
Rated speed rpm : 500	· ·
	+ Rated speed rpm : 1350

LOW IDLE		Pressure hPa : 880 rack travel mm : 13.20 Tolerance mm : +- 0.20
control lever position degree tolerance degree	: 73.0 : + 4.0	Pressure hPa : 240 rack travel mm : 11.20 Tolerance mm : +- 0.05
control lever position degree tolerance degree	: 20.0 : + 4.0	START CUT-OUT
Testing:		Rated speed rpm : > 100 Rated speed rpm : < 280
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : ← 0.10	Check speed 1/min : > 80 Check
Rated speed rpm	: 250	+ speed 1/min : < 300
CRT mm min.	: > 8.20	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 350	Aneroid pressure hPa : 1500 Rated speed rpm : 650
TORQUE CONTROL		Del. quantity  cm3/1000 strokes : 197.0
Rated speed rpm rack travel mm Tolerance mm	: 14.80	Tolerance  - cm3/1000 strokes : + 3.0  - check tolerance
Rated speed rom	: 650	cm3/1000s. : + 6.0 Spreed
rack travel mm Tolerance mm	: 14.20 : + 0.10	+ Tolerance + cm3/1000 strokes : 12.0 + Check tolerance
Rated speed rpm rack travel mm	: 14.70	cm3/1000s. : 16.0
Tolerance mm	: +- 0.15	Aneroid pressure hPa : -
ANEROID/ALTITUDE COMPENSATOR TEST		Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 111.0
OFTENS		+ Tolerance + cm3/1000 strokes : +- 2.0
SETTING	4050	+ Check tolerance + cm3/1000S. : +- 4.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm		BREAKAWAY
MEASUREMENT		Rack travel in mm: 13.80
Pressure hPa Rated speed rpm rack travel mm	: 10.40	Rated speed rpm : 1145 Tolerance 1/min : +- 5
Tolerance mm	: + 0.20	STARTING FUEL DELIVERY

Rated speed rpm : 1050

0
0
0
0
0

# LOW IDLE

Rated speed rpm 350 5.10 rack travel mm : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 25.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance 7.0 cm3/1000 strokes : Check tolerance cm3/1000s. 11.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16.04.96 : ISO 4113

Combination No. : 0 402 736 894

Injection pump

Pump designation : PES6P12DA12DRS7400

EP type number : 0 412 726 950

Governor

Governer design. : RQV350...1200PA1261

Governer no. : 0 421 815 495

Cust. part No. : 3282766

Customer-spec. information Customer : CUMMINS Motor : 6CTAA Power KW : 191.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 125 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar :  $\leftarrow$  1.0

Prestroke mm Tolerance mm : 3.30 : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

: + 0.50 tolerance "NW

Start of delivery blocking

7.70 "NW after s.o.d. : : + 0.50Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 13.95

Tolerance mm : +- 0.05 +	4
	Rated speed rpm : 1520
Del. quantity +	guide sleeve
cm3/1000 strokes : 190.0 +	travel mm : 13.50
	Tolerance mm : + 0.50
Tolerance +	
cm3/1000 strokes : + 1.0 +	CHAR OF THE POSTTON
Check tolerance	GUIDE SLEEVE POSITION
check toterance : +- 4.0 +	Rated speed rpm : 1340
CIBY 10003 — 4.0	Rated speed rpm : 1340
Spreed	Rack travel in mm : 12.60
Tolerance	Tolerance mm : + 2.00
cm3/1000 strokes : 5.0	roceratice time
1 J.G	
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	TOLK LOND DECEMENT IN TOLK LOND OVO
	Rated speed rpm : 1150
Rated speed rpm : 350	Aneroid pressure
	hPa : 1500
Rack travel in mm: 5.10	Del. quantity
Tolerance mm : + 0.30	cm3/1000 strokes : 190.0
Del. quantity	Tolerance
cm3/1000 strokes : 25.0	cm3/1000 strokes : +- 1.0
Tolerance	Check tolerance
cm3/1000 strokes : +- 3.0 +	cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 5.0 +	Tolerance
Spreed	cm3/1000 strokes : 5.0
Tolerance +	Check tolerance
cm3/1000 strokes : 7.0 +	cm3/1000s. : 9.0
Check tolerance +	
cm3/1000s. : 11.0 +	
<del>†</del>	
†	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	control lever
<u> </u>	position degree : 66.0
CUIDE ÉLECUE TRAVEL	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	control lever
Rated speed rpm : 350	position degree : 120.0
Rated speed rpm : 350 + guide sleeve +	tolerance degree : +- 4.0
travel mm : 1.93	toterance degree . The 4.C
Tolerance mm : + 0.20	RATED SPEED
Total and the man	NATED STEED
Rated speed rpm : 1258	rack travel mm : 12.90
guide sleeve	Rated speed rpm : 1245
travel mm : 10.14 +	Tolerance 1/min : + 5
Tolerance mm : + 0.15	
1	rack travel mm : 4.00
Rated speed rpm : 766	Rated speed rpm : 1360
guide sleeve	Tolerance 1/min : + 15
travel mm : 5.91	
Tolerance mm : + 0.25	rack travel mm : 0.50
+	Tolerance mm : +- 0.50
Rated speed rpm : 450	Rated speed rpm : 1450
guide sleeve	
travel mm : 4.49 +	
Tolerance mm : + 0.25 +	

		+ -
LOW IDLE		+ Pressure hPa : 880 + rack travel mm : 13.20 + Tolerance mm : + 0.20
control lever position degree tolerance degree	: 74.0 : + 4.0	Pressure hPa : 240 rack travel mm : 11.20 Tolerance mm : + 0.05
control lever position degree tolerance degree		START CUT-OUT
Testing:		Rated speed rpm : > 100 Rated speed rpm : < 280
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : + 0.10	Check :> 80 Check
Rated speed rpm	: 250	- speed 1/min : < 300
CRT mm min.	: > 8.20	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 350	Aneroid pressure hPa : 1500 Rated speed rpm : 600
TORQUE CONTROL		Del. quantity  - cm3/1000 strokes : 176.0
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 13.95 : + 0.05	Aneroid pressure hPa : 1500 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 176.0 Tolerance cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed Tolerance cm3/1000 strokes : 12.0 Check tolerance cm3/1000s. : 16.0
Rated speed rpm	: 600	cm3/1000s. : + 6.0 Spreed
rack travel mm Tolerance mm	: 13.40 : + 0.10	Tolerance cm3/1000 strokes : 12.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.05	cm3/1000s. : 16.0  Aneroid pressure
	0.13	+ hPa : - Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST	<i>,</i>	+ Del. quantity + cm3/1000 strokes : 111.0 + Tolerance
SETTING		+ cm3/1000 strokes : + 2.0 + Check tolerance + cm3/1000s. : + 4.0
Rated speed rpm Pressure hPa		+ cm3/1000s. : + 4.0
rack travel mm Tolerance mm	: 13.95	BREAKAWAY
MEASUREMENT		Rack travel in mm: 12.90 Rated speed rpm: 1245
Pressure hPa Rated speed rpm rack travel mm Tolerance mm		Tolerance 1/min : + 5
Rated speed rpm		STARTING FUEL DELIVERY
•		

Rated speed rpm	: 100
rack travel mm	: 20.50
Tolerance mm	: <b>←</b> 0.50
Del. quantity	
cm3/1000 strokes	: 180.0
Tolerance	
cm3/1000 strokes	: +- 20.0
Check tolerance	
cm3/1000S.	: +- 24.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm	:	350 5.10 0.30
Del. quantity cm3/1000 strokes	:	25.0
Tolerance cm3/1000 strokes	• 4	3.0
Check tolerance	• •	5.0
cm3/1000s.	: +	5.0
Spreed Tolerance		
cm3/1000 strokes	:	7.0
Check tolerance cm3/1000s.	:	11.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 12,04,96

Test oil

: ISO 4113

Combination No. : 0 402 746 608

Injection pump

Pump designation : PES6P120A320RS7359

EP type number : 0 412 726 925

Governor

Governer design. : RQ275/1050PA1275

Governer no. : 0 421 801 805

Cust. part No. : CCEP 5157A 66-222

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDRO62045 F/C41

Power KW

: 152.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 220 Tolerance L/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter:

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : + 1.0

Prestroke mm : 4.70
Toierance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 20.25

Tolerance mm :  $\leftarrow$  0.75

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Tolerance Check

: +- 0.30

tolerance °NW

: +- 0.50

Start of delivery mark

*NW after s.o.d. : -0.45

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

	•	and the set and a
Rack travel in mm		guide sleeve travel mm : 6.18
Tolerance mm	: + 0.05	Tolerance mm : +- 0.10
Del. quantity	+	Rated speed rpm : 375
cm3/1000 strokes	: 173.0	guide sleeve travel mm : 5.00
Tolerance cm3/1000 strokes	10	Tolerance mm : + 0.10
	: +- 1.0	Rated speed rpm : 450
Check tolerance cm3/1000s.	: +- 4.0	guide sleeve travel mm : 6.00
	Ţ.,	Tolerance mm : + 0.10
Spreed	†	5. d. d
Tolerance cm3/1000 strokes	: 5.0	Rated speed rpm : 1300 guide sleeve
CIID/ TUBU STrokes	· J.0	travel mm : 11.50
Check tolerance		Tolerance mm : + 0.50
cm3/1000s.	: 9.0	
	+	Rated speed rpm : 873
Rated speed rpm	: 275 +	guide sleeve
B 1 A 1 . 2	T 20	travel mm : 6.52
Rack travel in mm	: -5.20 : + 0.20	Tolerance mm : +- 0.10
Tolerance mm Del. quantity	: + 0.20 I	
cm3/1000 strokes	: 31.0	GUIDE SLEEVE POSITION
Tolerance	1	
cm3/1000 strokes	: + 2.0	Rated speed rpm : 500
Check tolerance cm3/1000s.	: +- 5.0	Rack travel in mm: 20.00
Spreed	· · · · · · · I	Tolerance mm : +- 0.80
Tolerance	1	TO COT GIRDO TIME
cm3/1000 strokes	: 8.0	
Check tolerance	+	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s.	: 12.0 +	
	†	Rated speed rpm : 1050
(B) SETTING OF IN	JECTION DUMP	Aneroid pressure hPa : 1000
WITH GOVERNOR	0.564.1014.1014	Del. quantity
WITH GOVERNOR	+	cm3/1000 strokes : 173.0
		Tolerance
GUIDE SLEEVE TRAV	EL †	cm3/1000 strokes : +- 1.0
<b>.</b>	, , , , , , , , , , , , , , , , , , ,	Check tolerance
Rated speed rpm	: 275	cm3/1000s. : +- 4.0 Spreed
guide sleeve travel mm	: 2.44	Tolerance
Tolerance mm	÷ 0.20	cm3/1000 strokes : 5.0
TO COT GITTO THE	1	Check tolerance
Rated speed rpm	: 1122	cm3/1000s. : 9.0
guide sleeve	+	
travel mm	: 7.06	
Tolerance mm	: + 0.15	CONTROL LEVER
Rated speed rpm	: 1050	CONTINUE CEVER
guide sleeve	1	control lever
travel mm	: 6.70	position degree : 276.0
Tolerance mm	: + 0.10	tolerance degree : +- 4.0
Ontrol	. 448	DATEN CDEEN
Rated speed rpm	: 648	RATED SPEED

rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	: 1115 : +- 5 : -7.60	MEASUREMENT  Pressure hPa : - Rated speed rpm : 500 rack travel mm : -0.65
Rated speed rpm Tolerance 1/min		+ Tolerance mm : + 0.20 + Rated speed rpm : 500
rack travel mm Tolerance mm Rated speed rpm`	: <b>←</b> 0.50	Pressure hPa : 280 rack travel mm : 0.80 Tolerance mm : +- 0.15
LOW IDLE		Pressure hPa : 160 Tolerance mm : + 0.05
control lever position degree	: 256.0	START CUT-OUT
tolerance degree Testing:	: +- 4.0	Rated speed rpm : > 100 Rated speed rpm : < 195
Rated speed rpm rack travel mm Tolerance mm	: -5.20	Check speed 1/min : > 80 Check speed 1/min : < 215
rack travel mm Rated speed rpm Tolerance 1/min	: 375	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	Aneroid pressure hPa: 1000 Rated speed rpm: 600
CRT mm min.	: < -3.30	Del. quantity cm3/1000 strokes : 195.0
TORQUE CONTROL		Tolerance cm3/1000 strokes : + 3.0 Check tolerance
Rated speed rpm		cm3/1000s. : +- 6.0
Rated speed rom rack travel mm Tolerance mm	: 600 : 1.20 : + 0.10	+ Aneroid pressure + hPa : - + Rated speed rpm : 500 + Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 800 : 0.75 : + 0.20	cm3/1000 strokes : 146.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		BREAKAWAY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1000 : 1.20 : ← 0.10	Rack travel in mm: -1.00 Rated speed rpm: 1115 Tolerance 1/min: +- 5

#### STARTING FUEL DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

275 Rated speed rpm -5.20 rack travel mm Tolerance mm : +- 0.20 Del. quantity

cm3/1000 strokes : 31.0

Tolerance

2.0 cm3/1000 strokes : +-

Check tolerance

cm3/1000s. 5.0

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. 12.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 11.04.96 Edition : ISO 4113 Test oil Combination No. : 0 402 746 640 Injection pump Pump designation : PES6P120A320RS7359 EP type number : 0 412 726 925 Governor Governer design. : RQV300...1050PA1191 Governer no. : 0 421 814 114 Cust. part No. : CCEP 5147B 66-223 Customer-spec. information Customer : RENAULT V.I. : MIDR 06.20.45 C4 Motor : 188.0 Power KW TEST BENCH REQUIREMENTS Inlet line : 3.1 Test oil inlet temp. °C Tolerance *C : +- 2.0 : 2 417 413 078 Overflow valve Inlet press. bar : Tolerance bar : +- 0.1 Test nozzle holde : 1 688 901 101 assembly Opening pressure 208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 008

x inside diameter: 2.0 x length mm : REMARKS (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____ BEGINNING OF DELIVERY Test pressure bar: Tolerance bar : +- 1.0 Prestroke mm 4.70 Tolerance mm : + - 0.50Check : + 0.10tolerance mm Rack travel in mm: 20.25 Tolerance mm : + 0.75 : 1-5-3-6-2-Firing order Phasing : 0-60-120-180-240 : -300 Tolerance : +- 0.30 Check tolerance "NW : +- 0.50 Start of delivery mark *NW after s.o.d. : -0.45 Tolerance : + 0.50Check tolerance °NW : + - 0.751 Barrel no. BASIC SETTING 700 Rated speed rpm : 12.50 Rack travel in mm : : +- 0.05 Tolerance mm Del. quantity cm3/1000 strokes : 188.0

Test Lines

Outside diameter : 6.0

Tolerance		Tolerance mm : + 0.25
cm3/1000 strokes	: +- 1.0	Rated speed rpm : 460 guide sleeve
Check tolerance		+ travel mm : 3.86
cm3/1000s.	: <b>←</b> 4.0	Tolerance mm : + 0.25
Command	<del></del>	Pated aread area a 1/40
Spreed Tolerance		+ Rated speed rpm : 1460 + guide sleeve
cm3/1000 strokes	: 5.0	travel mm : 11.50
CHOY TOOU SCIOKES	. 5.0	Tolerance mm : + 0.50
Check tolerance		Total allow with
cm3/1000S.	: 9.0	
		+ GUIDE SLEEVE POSITION
Rated speed rpm	: 300	+
- 1 · 1 · 1	4.00	+ Rated speed rpm : 1230
Rack travel in mm		Deal travel in my a 11.70
Tolerance mm Del. quantity	: <del>+</del> 0.20	+ Rack travel in mm : 11.70 + Tolerance mm : +- 2.00
cm3/1000 strokes	: 34.0	
Tolerance	. 54.0	
cm3/1000 strokes	: +- 2.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		+
cm3/1000s.	: <del>←</del> 5.0	+ Rated speed rpm : 700
Spreed		+ Aneroid pressure
Tolerance		+ hPa : 1000
cm3/1000 strokes Check tolerance	: 8.0	+ Del. quantity + cm3/1000 strokes : 188.0
cm3/1000s.	: 12.0	Tolerance
Chor (Coos.	. 12.0	+ cm3/1000 strokes : + 1.0
		+ Check tolerance
(B) SETTING OF INJ	ECTION PUMP	+  cm3/1000s. : + 4.0
WITH GOVERNOR		Spreed
		+ Tolerance + cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAVE	T.	Check tolerance
00000 01000 01000		+ cm3/1000s. : 9.0
Rated speed rpm	: 300	+
guide sleeve		+
travel mm	: 1.33	
Tolerance mm	: +- 0.25	CONTROL LEVER
Rated speed rpm	: 1140	t control lever
guide sleeve	• (1,170	position degree : 304.0
travel mm	: 8.49	tolerance degree : +- 4.0
Tolerance mm	: +- 0.25	+
Bassal succed con		+ RATED SPEED
	. 75/	T RATED SPEED
	<b>:</b> 754	+
guide sleeve		+ rack travel mm : -1.00
guide sleeve travel mm	: 6.10	rack travel mm : -1.00 Rated speed rpm : 1135
guide sleeve travel mm		rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5
guide sleeve travel mm Tolerance mm Rated speed rpm	: 6.10	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5 rack travel mm : -8.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	: 6.10 : + 0.25 : 365	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5 rack travel mm : -8.50 Rated speed rpm : 1290
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 6.10 : + 0.25 : 365 : 2.40	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5 rack travel mm : -8.50
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm	: 6.10 : + 0.25 : 365	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5  rack travel mm : -8.50 Rated speed rpm : 1290 Tolerance 1/min : + 15
guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.10 : + 0.25 : 365 : 2.40 : + 0.25	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5  rack travel mm : -8.50 Rated speed rpm : 1290 Tolerance 1/min : + 15  rack travel mm : -12.00
guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	: 6.10 : + 0.25 : 365 : 2.40	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5  rack travel mm : -8.50 Rated speed rpm : 1290 Tolerance 1/min : + 15
guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	: 6.10 : + 0.25 : 365 : 2.40 : + 0.25	rack travel mm : -1.00 Rated speed rpm : 1135 Tolerance 1/min : + 5  rack travel mm : -8.50 Rated speed rpm : 1290 Tolerance 1/min : + 15  rack travel mm : -12.00 Tolerance mm : + 0.50

FOM IDTE	
control lever position degree tolerance degree	: 268.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -6.00 : + 0.10
Rated speed rpm	: 200
CRT mm max.	: < -3.60
Rated speed rpm	: 370
TORQUE CONTROL	
Rated speed rpm	: 700
Rated speed rpm Tolerance mm	: 1050 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : 1000
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : -1.35 : +- 0.20
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 140 : -0.75 : +- 0.15
Pressure hPa rack travel mm	: 200 : -0.35 : + 0.05

Rated speed rpm	: < 220	
Check speed 1/min Check	: > 80	
speed 1/min	: < 240	
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 1000 : 1050 : 192.0 : +- 3.0	
Check tolerance cm3/1000s.	: +- 6.0	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 148.0 : + 1.0 : + 4.0	
BREAKAWAY		
Rack travel in mm Rated speed rpm Tolerance 1/min	: -1.00 : 1135 : +- 5	
STARTING FUEL DEL	IVERY	
Rated speed rpm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		
LOW IDLE	tter til pringe til fre stantisk med migd med til det stant stande hande hand spekerskette det på sterfattyre d	~~

Rated speed rpm : > 100

Del. quantity cm3/1000 strokes : 34.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.04.96 Test oil : ISO 4113

Combination No. : 0 402 196 702

Injection pump

Pump designation : PES6P12DA72DRS3184 EP type number : 0 412 026 727

Governor

Governer design. : RE24

Governer no. : 0 421 890 006

Cust. part No. : RE 47396

Customer-spec. information
Customer : DEERE
Motor : 6076 F030
Power KW : 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. *C : 40
Tolerance *C : +- 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

#### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60

Prestroke mm : 3.60
Tolerance mm : + 0.05
Tolerance mm : + 0.03
Check

tolerance mm : + 0.10

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Rack travel in mm : 10.50
Tolerance mm : + 1.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

°NW after s.o.d. : 10.50 Tolerance : +- 0.50

Check : ← 0.75 tolerance °NW : 1 Barrel no. Beginning of delivery differende and maximum rack 15.00 travel Tolerance mm +- 0.50 Difference ° CS 6.00 (B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 VTESTING & SETTING RACK TRAVEL SENSOR POSITION Engine speed min-1: Setting point (P, R and H pump) 3.100 Uact V : CRT mm 13.00 : +/- 0.05 Tolerance mm Check : +/- 0.10 tolerance mm Check value (P, R and H pump) 1.700 Uact V CRT mm 6.15 Tolerance mm : +/- 0.25 Check : +/- 0.30 tolerance mm Setting point (amuq M) Uact V 3.100 CRT mm 12.50 Tolerance mm : +/- 0.05Check tolerance mm : +/- 0.10Check value (amua M) 1.700 Uact V

5.50

: +/- 0.25

Check tolerance mm : +/- 0.30 Stop position Uact V : Value with deenergised adjusting magnet and control rod in stop position. CRT mm 0.75 : +/- 0.25 Tolerance mm Check : +/- 0.35 tolerance mm ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps) Test with control rod in stop position Engine speed min-1: 60 1.4 Amplitude V Tolerance V : +/- 0.6 Check : +/- 1,20 tolerance V Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4 (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Rated speed rpm 1100 Uact V 2.710 Del. quantity cm3/1000 strokes : 141.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. : +-4.0 Spreed Tolerance 5.0 cm3/1000 strokes : Check tolerance cm3/1000s.9.0 FUEL DELIVERY CHARACTERISTICS 700 Rated speed rpm 2.710 Uact V Del. quantity cm3/1000 strokes : 142.0

CRT mm

Tolerance mm

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + 3.0 : + 6.0 : 8.0 : 12.0
Rated speed rpm Uact V Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 425 : 1.400 : 21.0 : + 3.0 : + 6.0 : 6.0 : 10.0
TEST POINT L1	
Rated speed rpm Uact V Tolerance Volt Check tolerance Volt	: 425 : 1.610 : +- 0.060 : +- 0.060
STARTING FUEL DELI	EVERY
Rated speed rpm Uact V Del. quantity cm3/1000 strokes	: 100 : 4.600 : 100.0
Tolerance cm3/1000 strokes Check tolerance	: + 10.0
cm3/1000s.	: + 13.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.03.96 Test oil : ISO 4113

Combination No. : 0 402 196 709

Injection pump

Pump designation : PES6P120A720RS3354 EP type number : 0 412 026 781

Governor

Governor design. : RE30

Governer no. :

Cust. part No. : RE 67771

Customer-spec. information Customer : DEERE Motor : 6081HRW06 Power KW : 149.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60

Prestroke mm : 3.60
Tolerance mm : + 0.05
Tolerance mm : + 0.03

Check
tolerance mm : + 0.10
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Rack travel in mm : 10.50
Tolerance mm : + 1.50
Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : + 0.30

Check

tolerance *NW : + 0.75

Start of delivery mark

*NW after s.o.d. : 8.50 Tolerance : + 0.50

Check tolerance *NW	: ← 0.75
Barrel no.	: 1
Beginning of deli	very differende
and maximum rack travel Tolerance mm Difference * CS	: 15.00 : + 0.50 : 2.50
(B) POSITIONER TE Warm-up time: 3 m n=600 min-1, Uact	inutes at
TESTING & SETTING POSITION	RACK TRAVEL SENSOR
Engine speed min-	1: 0
Setting point (P, R and H pump)	
Uact V CRT mm Tolerance mm Check	: 3.100 : 13.00 : +/- 0.05
	: +/- 0.10
Check value (P, R and H pump)	
Uact V CRT mm Tolerance mm Check	: 1.700 : 6.15 : +/- 0.25
tolerance mm	: +/- 0.30
Setting point (M pump)	
Uact V CRT mm Tolerance mm	: 3.100 : 12.50 : +/- 0.05
Check tolerance mm	: +/- 0.10
Check value (M pump)	
Uact V CRT mm Tolerance mm	: 1.700 : 5.50 : +/- 0.25

Check tolerance mm :	∻/- 0.30
Stop position	
deenergi	Value with sed adjusting magnet and control rod in stop position.
CRT mm :	0.75 +/- 0.25
*** - * * *	+/- 0.35
ENGINE-SPEED SENSOR (All P and R pumps no H and M pumps)	ot
Test with control roo in stop position	H
Engine speed min-1: Amplitude V : Tolerance V : d	60 1.4 -/- 0.6
	-/- 1.20
Engine speed min-1: Difference Amplitude to	600
Amplitude V : n	nax.1.4
(C) INJECTION PUMP WI	TH POSITIONER
TEST POINT V1	
Rated speed rpm : Uact V : Del. quantity	1100 2.880
cm3/1000 strokes : Tolerance	140.0
	- 1.0
cm3/1000S. : +	- 3.0
Tolerance cm3/1000 strokes :	5.0
Check tolerance cm3/1000s. :	9.0
FUEL DELIVERY CHARACT	ERISTICS
Rated speed rpm : Uact V :	700 2.880
Del. quantity cm3/1000 strokes :	141.5

Tolerance	
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000s.	; ← 6.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
Rated speed rpm	: 425
Uact V Del. quantity	: 1.610
cm3/1000 strokes Tolerance	: 22.0
cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s.	: +- 6.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 6.0
cm3/1000s.	: 10.0
TEST POINT L1	
Rated speed rpm	: 425
Uact V Tolerance Volt	: 1.610 : +- 0.060
Check tolerance Volt	: +- 0.060
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Uact V Del. quantity	: 4.600
cm3/1000 strokes Tolerance	: 105.0
cm3/1000 strokes	: +- 10.0
Check tolerance cm3/1000s.	: <del>-</del> 13.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 20.03.96 **Edition** : ISO 4113 Test oil

Combination No. : 0 402 196 710

Injection pump

Pump designation : PES6P120A720RS3354

EP type number : 0 412 026 781

Governor

Governer design. : RE30

Governer no.

Cust. part No. : RE 67448

Customer-spec. information Customer : DEERE : 6081AT002 Motor Power KW : 135.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 077

Inlet press. bar : 2.0 Tolerance bar : +- 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0 x inside diameter : 3.0

x length mm : 600

### REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 3.60

Prestroke mm 3.60 : ← 0.05 Tolerance mm Tolerance mm : +- 0.03

Check : + 0.10 tolerance mm Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50

Rack travel in mm : 10.50 Tolerance mm : + 1.50
Tolerance mm : + 1.50 : +- 1.50 Tolerance mm

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 : +- 0.30

Tolerance Check : +- 0.75 tolerance *NW

Start of delivery mark

*NW after s.o.d. : 7.00 Tolerance : + 0.50

Check tolerance *NW	: +- 0.75
Barrel no.	: 1
Beginning of deli	very differende
and maximum rack travel Tolerance mm Difference ° CS	: 15.00 : + 0.50 : 2.50
(B) POSITIONER TE Warm-up time: 3 m n=600 min-1, Uact	inutes at
TESTING & SETTING POSITION	RACK TRAVEL SENSOR
Engine speed min-	1: 0
Setting point (P, R and H pump)	
Uact V CRT mm Tolerance mm Check tolerance mm	: 3.100 : 13.00 : +/- 0.05 : +/- 0.10
Check value (P, R and H pump)	
Uact V CRT mm Tolerance mm Check tolerance mm	: 1.700 : 6.15 : +/- 0.25 : +/- 0.30
Setting point (M pump)	
Uact V CRT mm Tolerance mm Check tolerance mm	: 3.100 : 12.50 : +/- 0.05 : +/- 0.10
Check value (M pump)	
Uact V CRT mm Tolerance mm	: 1.700 : 5.50 : +/- 0.25

Check tolerance mm : +/- 0.30
Stop position
Uact V : Value with deenergised adjusting magnet and control rod in stop position.  CRT mm : 0.75 Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35
ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)
Test with control rod in stop position
Engine speed min-1: 60 Amplitude V : 1.4 Tolerance V : +/- 0.6 Check tolerance V : +/- 1.20
Engine speed min-1: 600 Difference Amplitude to Amplitude V : max.1.4
(C) INJECTION PUMP WITH POSITIONER
TEST POINT V1
Rated speed rpm : 1100 Uact V : 2.880 Del. quantity
cm3/1000 strokes : 140.0 Tolerance
cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 3.0 Spreed
Tolerance cm3/1000 strokes : 5.0
Check tolerance cm3/1000S. : 9.0
FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 700 Uact V : 2.880
Del. quantity cm3/1000 strokes : 141.5

Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0 : 8.0 : 12.0
Rated speed rpm Uact V Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 425 : 1.610 : 22.0 : + 3.0 : + 6.0 : 6.0 : 10.0
TEST POINT L1  Rated speed rpm Uact V Tolerance Volt Check tolerance Volt	: 425 : 1.610 : + 0.060 : + 0.060
Rated speed rpm Uact V Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	IVERY : 100 : 4.600 : 105.0 : ← 10.0 : ← 13.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.04.96 : ISO 4113

Combination No. : 0 402 746 613

Injection pump

Pump designation : PES6P120A320RS7372 EP type number : 0 412 726 940

Governor

Governer design. : RQV250...1250PA1283K

Governer no. : 0 421 815 516

Cust. part No. : 3866785

Customer-spec. information Customer : CDC Motor : 6BTA

Power KW

: 164.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: ← 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 2.0
Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: + 0.30 Tolerance

Check

tolerance *NW

: +- 0.75

Start of delivery blocking

*NW after s.o.d. : 11.50

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 12.05

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes	: 143.5	+ FULL LOAD DELIVERY AT FULL LOAD	STOP
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 1250 Ameroid pressure	
Check tolerance cm3/1000s.	: + 4.0	+ hPa : 900 + Del. quantity	
Spreed		+ cm3/1000 strokes : 143.5 + Tolerance + cm3/1000 strokes : + 1.0	
Tolerance cm3/1000 strokes	: 5.0	cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000s. : +- 4.0	
Check tolerance cm3/1000s.	: 9.0	Spreed Tolerance cm3/1000 strokes : 5.0	
Del. quantity cm3/1000 strokes	: 28.5	Check tolerance cm3/1000s. : 9.0	
Tolerance cm3/1000 strokes Check tolerance	<b>:</b> ← 3.0	İ	·
cm3/1000s. Spreed	: <del>+-</del> 5.0	CONTROL LEVER	<del>nde</del> r to the second
Tolerance cm3/1000 strokes Check tolerance	: 8.0	control lever position degree : 114.0 tolerance degree : + 4.0	
cm3/1000s.	: 12.0	RATED SPEED	
. (B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	rack travel mm : 11.00 Rated speed rpm : 1310 Tolerance 1/min : + 5	
GUIDE SLEEVE TRAV	/EL	rack travel mm : 4.00 Rated speed rpm : 1475	
Rated speed rpm guide sleeve	: 275	+ Tolerance 1/min : + 15	
travel mm Tolerance mm	: 1.39 : +- 0.20	+ rack travel mm : 0.50 + Tolerance mm : + 0.50 + Rated speed rpm : 1600	
Rated speed rpm guide sleeve	: 1305	‡	
travel mm Tolerance mm	: 7.93 : + 0.15	LOW IDLE	
Rated speed rpm guide sleeve	: 864	control lever	
travel mm Tolerance mm	: 5.36 : +- 0.25	+ position degree : 76.0 + tolerance degree : +- 4.0	
Rated speed rpm guide sleeve	: 480	Testing:	
travel mm Tolerance mm	: 3.18 : +- 0.25	Rated speed rpm : 300 rack travel mm : 7.40 Tolerance mm : +- 0.20	
Rated speed rpm guide sleeve	: 1860	Rated speed rpm : 275	
travel mm Tolerance mm	: 13.50 : +- 0.50	CRT mm min. :> 8.20	

Rated speed rpm	: 450	†
TODOUE CONTROL	<del></del>	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		Aneroid pressure
Rated speed rpm	: 1250	hPa : 900
rack travel mm	: 12.05	Rated speed rpm : 900
rack travel mm Tolerance mm	: + 0.05	+ Del. quantity
		+ cm3/1000 strokes : 145.0
Rated speed rpm	: 900	+ Tolerance
rack travel mm	: 11.80	+ cm3/1000 strokes : +- 3.0
Tolerance mm	: +- 0.10	+ Check tolerance
But all annual man	- 000	+ cm3/1000s. : $+$ 6.0
Rated speed rpm	: 800 : 10.00	+ Spreed
rack travel mm Tolerance mm	: 12.00	Tolerance
loterance mm	: + 0.10	cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm	: 600	+ cm3/1000s. : 12.0
rack travel mm		1 (115) 10003: 12:0
Tolerance mm		+ Aneroid pressure
10to ano man	. 0.25	hPa : -
		Rated speed rpm : 600
ANEROID/ALTITUDE		+ Del. quantity
COMPENSATOR TEST		→ cm3/1000 strokes : 90.5
		+ Tolerance
		+ cm3/1000 strokes : +- 1.0
SETTING		+ Check tolerance
		+  cm3/1000s. : + 3.0
Rated speed rpm	: 1250	+
Pressure hPa	: 900	DEFAMALIAN
MEACUDEMENT		+ BREAKAWAY
MEASUREMENT		Ī
Pressure hPa	•	Rack travel in mm : 11.00
Rated speed rpm	1250	+ Rated speed rpm : 1310
rack travel mm	: 10.00	Tolerance 1/min : +- 5
rack travel mm Tolerance mm	: +- 0.20	1
		+
Rated speed rpm	: 1250	
		† STARTING FUEL DELIVERY
Pressure hPa	: 550	†
rack travel mm	: 11.10	+ Rated speed rpm : 100
Tolerance mm	: ← 0.20	+ rack travel mm : 21.00
Danasius 655	: 265	+ Tolerance mm : +- 0.50
Pressure hPa rack travel mm	10.20	+ Del. quantity + cm3/1000 strokes : 184.5
Tolerance mm	: +- 0.20	Tolerance
loterative min	. 4. 0.20	- cm3/1000 strokes : +- 20.0
START CUT-OUT		+ cm3/1000s. : + 25.0
		1
Rated speed rpm	: > 100	+
Rated speed rpm	: < 250	+
-4		+
Check		+ LOW IDLE
speed 1/min	: > 80	No. 1
Check		+ Del. quantity
speed 1/min	: < 260	cm3/1000 strokes : 28.5 Tolerance
		+ cm3/1000 strokes : +- 3.0
		T CHIDY TOUGH SELECTED . TO 3.0

Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W480/...

Edition : 23.04.96 Test oil : ISO 4113

Combination No. : 9 400 030 731

Injection pump

Pump designation : PES6A95D32D/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100A0C843R

Governer no. : 9 420 034 709

Cust. part No. : 3929406

Customer-spec. information Customer : CDC Motor : 6BT Power KW : 100.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance *NW : +- 0.75

Start of delivery blocking

*NW after s.o.d. : 7.50 Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 11.25
Tolerance mm: + 0.05

Del. quantity cm3/1000 strokes : 94.0	+ rack travel mm : 10.20 + Rated speed rpm : 1165
Tolerance cm3/1000 strokes : +- 1.0	Tolerance 1/min : + 5
	+ rack travel mm : 0.85
Check tolerance cm3/1000s. : +- 3.0	Tolerance mm : +- 0.55 Rated speed rpm : 1300
Spreed	rack travel mm : 4.50
Tolerance	Rated speed rpm : 1215
cm3/1000 strokes : 4.0	
Check tolerance	
cm3/1000s. : 6.5	LOW IDLE
Del. quantity	Setting point w/out bumper spring
cm3/1000 strokes : 18.5	+
Tolerance	+ Rated speed rpm : 475
cm3/1000 strokes : +- 2.0 Check tolerance	† rack travel mm : 4.60
cm3/1000S. : +- 4.5	Testing:
Spreed	T reserving.
Tolerance	Rated speed rpm : 475
cm3/1000 strokes : 6.0	+ rack travel mm : 5.10
Check tolerance	+ Tolerance mm : +- 0.10
cm3/1000s. : 8.0	+
	TODOUG ANITOO!
(B) SETTING OF INJECTION PUMP	TORQUE CONTROL
WITH GOVERNOR	Rated speed rpm : 1100
WITH GOVERNOR	rack travel mm : 11.25
	+ Tolerance mm : + 0.05
GUIDE SLEEVE POSITION	+ Rated speed rpm : 800
	rack travel mm : 12.00 Tolerance mm : + 0.10
governor spring pre-tension	† Tolerance mm : +- 0.10
click setting x : 5.00	I
struck deterning A . J.ou	ANEROID/ALTITUDE
	COMPENSATOR TEST
FULL LOAD DELIVERY AT FULL LOAD STOP	+
Rated speed rpm : 1100	CETTAIC
Rated speed rpm : 1100 Aneroid pressure	± SETTING
hPa : 900	+ Rated speed rpm : 800
Del. quantity	+ Pressure hPa : 900
cm3/1000 strokes : 94.0	+
Tolerance	MEASUREMENT
cm3/1000 strokes : +- 1.0	, Danasana 10a
Check tolerance cm3/1000s. : +- 3.0	+ Pressure hPa : - Rated speed rpm : 800
Spreed	+ rack travel mm : 8.70
Tolerance	Tolerance mm : + 0.10
cm3/1000 strokes : 4.0	1000.000
Check tolerance	+ Rated speed rpm : 800
cm3/1000s. : 6.5	+
	+ Pressure hPa : 600
DATEN COULD	+ rack travel mm : 11.10
RATED SPEED	† Tolerance mm : + 0.20

Pressure hPa rack travel mm Tolerance mm	: +	275 9.50 - 0.20
FUEL DELIVERY CHA	RACT	ERISTICS
Aneroid pressure hPa Rated speed rpm	:	900 800

Del. quantity

cm3/1000 strokes : 107.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. 4.0

Ameroid pressure

hPa 800 Rated speed rpm

Del. quantity

cm3/1000 strokes : 65.5

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0 : +--

#### BREAKAWAY

Rack travel in mm: 10.20 Rated speed rpm : 1165 Tolerance 1/min

# STARTING FUEL DELIVERY

100 Rated speed rpm 20.50 rack travel mm : +- 0.50 Tolerance mm Del. quantity

cm3/1000 strokes : 120.5

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

: + 15.0 cm3/1000s.

### LOW IDLE

Del. quantity

cm3/1000 strokes : 18.5

Tolerance cm3/1000 strokes 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s.

End of test specification sheet

8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.04.96 : ISO 4113 Test oil

Combination No. : 0 401 878 716

Injection pump

Pump designation : PE8P110A320LS3842-1

EP type number : 0 411 818 716

Governor

Governer design. : RSV675...1050P0A823

: -9

: 0 421 833 365 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : 0M442 Motor Power KW : 213.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : + 1.5 Test Lines : 1 680 750 089

Outside diameter :

x inside diameter: 2.5 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + - 0.05Check

: + 0.10tolerance mm

Rack travel in mm: 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3 : - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : +- 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.50

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 13.05 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 142.0

Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000s. : + 3.5  Spreed Tolerance  Tolerance	
Check tolerance cm3/1000s. : + 3.5 control lever position degree : 86.0 spreed tolerance degree : + 4.0 Tolerance	<del></del>
Spreed + tolerance degree : +- 4.0 Tolerance	
cm3/1000 strokes : 4.0	
Check tolerance cm3/1000s. : 7.0 LOW IDLE	
Rated speed rpm : 675	
Rack travel in mm: 5.10 + control lever  Tolerance mm: + 0.30 + tolerance degree: + 4.0  Del. quantity	
cm3/1000 strokes : 18.0 + Testing:	
Tolerance cm3/1000 strokes : + 3.0	
Spreed Tolerance + rack travel mm : 2.00 cm3/1000 strokes : 4.0 + Rated speed rpm : 705 Check tolerance + Tolerance 1/min : + 30	
cm3/1000S. : 7.0 + Rated speed rpm : 100	
(B) SETTING OF INJECTION PUMP CRT mm min. : > 15.00 WITH GOVERNOR  SET IDLE AUXILIARY SPRING	
GUIDE SLEEVE POSITION + rack travel mm : 2.00	
Rated speed rpm : 800 TORQUE CONTROL	
Rack travel in mm: 0.50	
FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 750 rack travel mm : 13.10	
Rated speed rpm : 1030 + Tolerance mm : + 0.10 Aneroid pressure hPa :	
cm3/1000 strokes : 142.0	
cm3/1000 strokes : + 1.0	
cm3/1000s. : + 3.5	
Tolerance + Rated speed rpm : 750 cm3/1000 strokes : 4.0 + Del. quantity	
Check tolerance + cm3/1000 strokes : 134.0 cm3/1000s. : 7.0 +	

Tolerance cm3/1000 strokes	; +	2.0
Check tolerance cm3/1000s.	· +	5.0
Spreed	•	3.0
Tolerance cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	8.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 150.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 14.0

## LOW IDLE

Rated speed rpm 675 rack travel mm 5.10 : + - 0.30Tolerance mm Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 5.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance 7.0 cm3/1000S.

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.02.95 Test oil : ISO 4113

Combination No. : 0 402 646 625

Injection pump

Pump designation : PE6P12OA32ORS7300 EP type number : 0 412 626 886

Governor

Governer design. : RQV275...1000PA1077K

Governer 🙉 : 0 421 815 358

Cust. part No. : 1280165

Customer-spec. information
Customer : DAF
Motor : WS 242 M
Power KW : 242.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. *C : 40 Tolerance *C : + 2.0

Overflow valve : 1 417 413 025

Inlet press, bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 140 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.35
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 15.00Tolerance mm : +-0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance NW : +- 0.50

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 15.05 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 228.0

Tolerance cm3/1000 strokes	: +- 1.0	+ Rated speed rpm : 400
Check tolerance cm3/1000s.	: +- 4.0	<pre>guide sleeve travel mm : 3.92 Tolerance mm : + 0.25</pre>
Spreed Tolerance cm3/1000 strokes Check tolerance		Rated speed rpm : 1310 guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
cm3/1000s.	: 9.0	GUIDE SLEEVE POSITION
Rated speed rpm	: 275	Rated speed rpm : 1140
Rack travel in m Tolerance mm Del. quantity cm3/1000 strokes	: +- 0.10	Rack travel in mm: 14.00 Tolerance mm: +- 1.30
Tolerance cm3/1000 strokes	: +- 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000S. Spreed Tolerance	: +- 6.0	Rated speed rpm : 980 Aneroid pressure hPa : -
cm3/1000 strokes Check tolerance		+ Del. quantity + cm3/1000 strokes : 228.0
cm3/1000s.	: 12.0	Tolerance cm3/1000 strokes : +- 1.0
(B) SETTING OF IN	NJECTION PUMP	- Check tolerance - cm3/1000s. : + 4.0 - Spreed - Tolerance - cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAN	VEL	Check tolerance cm3/1000s. : 9.0
Rated speed rpm guide sleeve travel mm	: 275 : 2.14	
Tolerance mm		CONTROL LEVER
Rated speed rpm guide sleeve travel mm Tolerance mm	: 9.83 : +- 0.15	control lever position degree : 119.0 tolerance degree : + 4.0  RATED SPEED
Rated speed rpm guide sleeve travel mm Tolerance mm	: 6.43	rack travel mm : 14.00 Rated speed rpm : 1037 Tolerance 1/min : + 8
Rated speed rpm guide sleeve travel mm Tolerance mm	: 2.27	rack travel mm : 4.00 Rated speed rpm : 1165 Tolerance 1/min : + 15
Rated speed rpm guide sleeve travel mm Tolerance mm	: 334 : 3.08	rack travel mm : 0.70 Tolerance mm : +- 0.70 Rated speed rpm : 1250

H05

LOW IDLE	
control lever position degree tolerance degree	: 75.0 : +- 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.30 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 395 : + 20
Rated speed rpm	: 175
CRT mm min.	: > 8.50 ³
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 980 : 15.05 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 850 : 14.95 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.95 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 14.60 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.40 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 980 : 1500 : 15.05 : +- 0.05

Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 980 : 12.30 : +- 0.10
Rated speed rpm	: 980
Pressure hPa rack travel mm Tolerance mm	: 480 : 14.35 : + 0.05
Pressure hPa rack travel mm Tolerance mm	: 270 : 12.90 : + 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: 750
Del. quantity cm3/1000 strokes	: 238.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
	. , , , , ,
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	: 600
cm3/1000 strokes Tolerance	: 157.0
cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 14.00 : 1037 : + 8

LOW IDLE

**MEASUREMENT** 

Rated speed rpm	;	275
rack travel mm	:	6.20
Tolerance mm	: +-	0.10
Del. quantity		
cm3/1000 strokes	:	17.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.04.96 Test oil : ISO 4113

Combination No. : 0 402 646 741

Injection pump

Pump designation : PE6P12OA32OLS7872 EP type number : 0 412 626 912

Governor

Governer design. : RQ750PA1231 Governer no. : 0 421 801 791

Cust. part No. : 04222728KY0165-17

Customer-spec. information

Customer : KHD

Motor : BF6M1015/C Power KW : 239.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 100 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-6-3-5-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.30 Tolerance mm : + 0.05

**H08** 

		+ Rated speed rpm : 930
Del. quantity		+ Rated speed rpm : 930 + guide sleeve
cm3/1000 strokes	365.0	travel mm : 13.50
CINDY 1000 SCI SKCS	. 303.0	+ Tolerance mm : +- 0.50
Tolerance		1
cm3/1000 strokes	: <b>←</b> 1.0	
	-	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance		+
cm3/1000s.	: +- 4.0	Rated speed rpm : 700
Connad		+ Aneroid pressure + hPa : -
Spreed Tolerance		Del. quantity
cm3/1000 strokes	: 5.0	+ cm3/1000 strokes : 365.0
		+ Tolerance
Check tolerance		+ cm3/1000 strokes : + 1.0
cm3/1000s.	: 9.0	+ Check tolerance
<b>5</b> .4.1.2	700	+  cm3/1000s. : + 4.0
Rated speed rpm	: 300	+ Spreed
Rack travel in ma	n: 4.90	+ Tolerance + cm3/1000 strokes : 5.0
Tolerance mm		Check tolerance
Del. quantity		+ cm3/1000s. : 9.0
cm3/1000 strokes	: 20.0	+
Tolerance		+
cm3/1000 strokes	: +- 3.0	CONTROL LEUED
Check tolerance	: +- 6.0	+ CONTROL LEVER
cm3/1000s. Spreed	: + 6.0	T control lever
Tolerance		position degree : 109.0
cm3/1000 strokes	: 8.0	tolerance degree : +- 4.0
Check tolerance		+
cm3/1000s.	: 12.0	+ RATED SPEED
		+ rack travel mm : 0.50
(B) SETTING OF IN	LIECTION DIMD	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50
WITH GOVERNOR	OFCITOR FORF	Rated speed rpm : 900
WETT GOVERNOR		The state of the s
·		ASSEMBLY GOVERNOR SETTING
GUIDE SLEEVE TRAV	'EL	+
<b>5</b> 1 1 1	745	+ Rated speed rpm : 750
Rated speed rpm	: 715	rack travel mm : 12.30
guide sleeve travel mm	: 4.23	Rated speed rpm : 780
Tolerance mm	: +- 0.15	+ Tolerance 1/min : + 4
	, , , , , , , , , , , , , , , , , , , ,	+ rack travel mm : 5.50
Rated speed rpm	: 610	+
guide sleeve	0.70	+ rack travel mm : 0.50
travel mm	: 0.72 : + 0.25	+ Tolerance mm : +- 0.50 + Rated speed rpm : 900
Tolerance mm	: - 0.25	Rated speed rpm : 900
Rated speed rpm	: 900	Rated speed rpm : 751
guide sleeve		+ rack travel mm : 12.30
travel mm	: 14.89	<b>+</b>
Tolerance mm	: ← 0.25	+ Rated speed rpm : 781
Data danced non	. 943	Tolerance 1/min : + 4 rack travel mm : 5.50
Rated speed rpm guide sleeve	: 862	rack travel mm : 5.50
travel mm	: 12.00	Track travel mm : 0.50
Tolerance mm	: +- 0.25	+ Tolerance mm : +- 0.50
		+

Rated speed rpm	: 752
rack travel mm	: 12.30
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
Rated speed rpm rack travel mm	
Rated speed rpm	: 783
Tolerance 1/min	: +- 4
rack travel mm	: 5.50
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 754
rack travel mm	: 12.30
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 900
Rated speed rpm rack travel mm	
Rated speed rpm	: 785
Tolerance 1/min	: +- 4
rack travel mm	: 5.50
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
TORQUE CONTROL	
Rated speed rpm	: 700
rack travel mm	: 13.30
Tolerance mm	: +- 0.05
START CUT-OUT	
Rated speed rpm	: > 100
Rated speed rpm	: < 560
Check speed 1/min	: > 80

Check speed 1/min	: <	: 580	
STARTING FUEL DEL	IVER	Υ	
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: : +	100 20.25 - 0.75	
cm3/1000 strokes Tolerance	:	200.0	
cm3/1000 strokes Check tolerance	: +	- 20.0	
cm3/1000s.	: +	- 24.0	
LOW IDLE  Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: + : + : :	300 4.90 - 0.20 20.0 - 3.0 - 6.0 8.0 12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.04.96 Edition Test oil : ISO 4113

Combination No. : 0 402 648 865

Injection pump

Pump designation : PE8P12OA32OLS78O1-4

EP type number : 0 412 628 839

Governor

Governer design. : RQV350...1050PA866

: -5

: 0 421 813 767 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM442 A Power KW : 260.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 : - 5- 4- 1

: +- 0.30

Phasing : 0-45-90-135-180 : -225-270-315

Check

Tolerance

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.85
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 182.0

Tolerance cm3/1000 strokes	: +- 1.0	Rack travel in mm : 17.25 Tolerance mm : +- 0.75
Check tolerance cm3/1000s.	: +- 4.0	FULL LOAD DELTUEDY AT FULL LOAD STOD
Spreed Tolerance cm3/1000 strokes	: 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050  Aneroid pressure hPa : 1100
Check tolerance cm3/1000s.	: 9.0	Del. quantity cm3/1000 strokes : 182.0
Rated speed rpm	: 350	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Rack travel in ma Tolerance mm Del. quantity		cm3/1000s. : +- 4.0 Spreed Tolerance
cm3/1000 strokes Tolerance	: 19.0	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000 strokes Check tolerance	+	cm3/1000s. : 9.0
cm3/1000S. Spreed Tolerance	: + 6.0	CONTROL LEVER
cm3/1000 strokes Check tolerance	+	control lever
cm3/1000s.	: 10.0	positiön degree : 119.0 tolerance degree : +- 4.0
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP	RATED SPEED
	<u> </u>	rack travel mm : 11.80 Rated speed rpm : 1095
GUIDE SLEEVE TRAV	/EL	Tolerance 1/min : + 5
Rated speed rpm guide sleeve travel mm	: 300	rack travel mm : 4.00 Rated speed rpm : 1175 Tolerance 1/min : +- 15
Tolerance mm	: + 0.20	rack travel mm : 0.75
Rated speed rpm guide sleeve	+	Tolerance mm : + 0.75 Rated speed rpm : 1300
travel mm Tolerance mm	: 9.50 : + 0.15	
Rated speed rpm guide sleeve	+	LOW IDLE
travel mm Tolerance mm	: 5.00 : + 0.25	control lever
Rated speed rpm guide sleeve	: 1100	position degree : 68.0 tolerance degree : +- 4.0
travel mm Tolerance mm	: 8.25 : + 0.25	Testing:
GUIDE SLEEVE POSI	TION	Rated speed rpm : 350 rack travel mm : 5.70 Tolerance mm : +- 0.10
	+	
Rated speed rpm	: 1130 +	Rated speed rpm : 250

H12

		+ Aneroid pressure
CRT mm min.	: > 7.30	+ hPa : 1100
		+ Rated speed rpm : 700
Rated speed rpm	: 450	+ Del. quantity
		+ cm3/1000 strokes : 215.0
		- + Tolerance
TORQUE CONTROL		- cm3/1000 strokes : +- 2.0
TORQUE CONTROL		
	4.5.50	+ Check tolerance
Rated speed rpm		+ cm3/1000s. : +- 5.0
rack travel mm		+ Spreed
Tolerance mm	: +- 0.05	+ Tolerance
		+ cm3/1000 strokes : 8.0
Rated speed rpm	: 700	+ Check tolerance
		- cm3/1000s. : 12.0
rack travel mm		† CIII37 10008. : 12.0
Tolerance mm	: +- 0.10	<b>†</b>
		+ Aneroid pressure
Rated speed rpm	: 950	+ hPa : 1100
rack travel mm	: 13.55	+ Rated speed rpm : 1050
Tolerance mm	: +- 0.05	+ Del. quantity
	3.05	- cm3/1000 strokes : 153.0
Datad annad	: 830	
Rated speed rpm		+ Tolerance
rack travel mm	: 14.40	+ cm3/1000 strokes : + 1.0
Tolerance mm	: <b>←</b> 0.10	+ Check tolerance
		+ cm3/1000s. : $+$ 4.0
		- + Spreed
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		- cm3/1000 strokes : 8.0
COMPENSATOR 1631		
		+ Check tolerance
		+ cm3/1000s. : 12.0
SETTING		+
		+ Aneroid pressure
Rated speed rpm	: 600	+ hPa : -
Pressure hPa	: -	Rated speed rpm : 500
rressure ira	•	
		+ Del. quantity
MEASUREMENT		+ cm3/1000 strokes : 144.0
		† Tolerance
Rated speed rpm	: 600	+ cm3/1000 strokes : +- 1.0
e for a contact.		+ Check tolerance
Pressure hPa	: 420	+ cm3/1000s. : +- 4.0
rack travel mm		Spreed
Tolerance mm	: +- 0.05	+ Tolerance
		+ cm3/1000 strokes : 8.0
Pressure hPa	: 600	+ Check tolerance
rack travel mm	: 2.40	+ cm3/1000s. : 12.0
Tolerance mm	: +- 0.10	1
TO COT MITTER THAT		<u> </u>
		_ I DDEAKALIAN
OTADT CUT OUT		- H BREAKAWAY
START CUT-OUT		<b>†</b>
		.1.
		T
Rated speed rpm	: > 100	Rack travel in mm : 11.80
		Rack travel in mm : 11.80 Rated speed rpm : 1095
		+ Rated speed rpm : 1095
Rated speed rpm		
Rated speed rpm Check	: < 270	+ Rated speed rpm : 1095
Rated speed rpm Check speed 1/min		+ Rated speed rpm : 1095
Rated speed rpm Check speed 1/min Check	: < 270	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm Rated speed rpm Check speed 1/min Check speed 1/min	: < 270	+ Rated speed rpm : 1095
Rated speed rpm Check speed 1/min Check	: < 270	Rated speed rpm : 1095 Tolerance 1/min : +- 5
Rated speed rpm Check speed 1/min Check	: < 270	Rated speed rpm : 1095 Tolerance 1/min : + 5  STARTING FUEL DELIVERY
Rated speed rpm Check speed 1/min Check speed 1/min	: < 270 : > 80 : < 250	Rated speed rpm : 1095 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100
Rated speed rpm Check speed 1/min Check	: < 270 : > 80 : < 250	Rated speed rpm : 1095 Tolerance 1/min : + 5  STARTING FUEL DELIVERY

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm 350 5.70 rack travel mm : **←** 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.04.96 Test oil : ISO 4113

Combination No. : 0 402 648 889

Injection pump

Pump designation : PE8P120A320LS7816

: -10

EP type number : 0 412 628 836

Governor

Governer design. : RQ300/950PA932-7 Governer no. : 0 421 801 743

Cust. part No. : 0190745502

Customer-spec. information
Customer : MB-NFZ
Motor : 0M442 LA
Power KW : 362.0

## TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

uneck

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50Tolerance mm : + 0.50

Firing order : 8-7-2-6-3 :-5-4-1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.30

Check

tolerance *NW : + 0.50

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 14.70

Rack travel in mm: 14.70 Tolerance mm: + 0.05

Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 256.0	Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : +- 1.0	CONTROL LEVER
Check tolerance cm3/1000s. : + 4.0	control lever position degree : 101.0
Spreed Tolerance cm3/1000 strokes : 6.0	tolerance degree : +- 4.0  RATED SPEED
Check tolerance cm3/1000s. 9.0	rack travel mm : 14.40 Rated speed rpm : 998
Rated speed rpm : 300	Tolerance 1/min : +- 8
Rack travel in mm: 6.20 Tolerance mm: + 0.30 Del. quantity	rack travel mm : 4.00 Rated speed rpm : 1085 Tolerance 1/min : +- 15
cm3/1000 strokes : 16.0	rack travel mm : 0.75 Tolerance mm : +- 0.75
cm3/1000 strokes : + 3.0 + Check tolerance	Rated speed rpm : 1150
cm3/1000s. : + 6.0	
Tolerance cm3/1000 strokes : 6.0	FOM IDTE
Check tolerance	control lever
cm3/1000s. : 10.0 +	position degree : 74.0 tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Testing:
<del>-</del>	Rated speed rpm : 300 rack travel mm : 6.20
GUIDE SLEEVE POSITION	rack trayel mm : 6.20 Tolerance mm : + 0.10
Rated speed rpm : 600	rack travel mm : 2.00 Rated speed rpm : 405
Rack travel in mm : 20.00	Tolerance 1/min : + 20
	Rated speed rpm : 200
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 7.80
Rated speed rpm : 600 Aneroid pressure	TORQUE CONTROL
hPa : 1000 + Del. quantity +	Rated speed rpm : 600
cm3/1000 strokes : 256.0 +	rack travel mm : 14.70 Tolerance mm : +- 0.05
cm3/1000 strokes : + 1.0 + Check tolerance	Rated speed rpm : 950
cm3/1000s. : +- 4.0 +	rack travel mm : 15.40 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : 6.0	Rated speed rpm : 800

rack travel mm Tolerance mm		theck tolerance cm3/1000s. : 12.0
ANEROID/ALTITUDE		
COMPENSATOR TEST		+ Rated speed rpm : 500
		+ Del. quantity + cm3/1000 strokes : 142.0
MEACHDEMENT		Tolerance cm3/1000 strokes : + 1.0
MEASUREMENT		- Check tolerance
Pressure hPa rack travel mm	: 350	+ cm3/1000s. : + 4.0 + Spreed
Tolerance mm		+ Tolerance
Pressure hPa	: 700	+ cm3/1000 strokes : 8.0 + Check tolerance
rack travel mm Tolerance mm	: -0.80	cm3/1000s. : 12.0
Tolerance mm	: +- 0.10	
Pressure hPa		BREAKAWAY
rack travel mm Tolerance mm	: 0.30 : + 0.05	<u> </u>
		Rack travel in mm: 14.40
Pressure hPa rack travel mm	: 1300 : 0.70	+ Rated speed rpm : 998 + Tolerance 1/min : +- 8
Tolerance mm	: + 0.10	Tocci ance in min
		STARTING FUEL DELIVERY
FUEL DELIVERY CHA	ARACTERISTICS	Rated speed rpm : 100 Del. quantity
Aneroid pressure		+ cm3/1000 strokes : 250.0
hPa Rated speed rpm	: 1600	+ Tolerance + cm3/1000 strokes : +- 10.0
Del. quantity		+ Check tolerance
cm3/1000 strokes Tolerance	: 267.5	+  cm3/1000s. : +- 14.0
cm3/1000 strokes		<del>-</del>
Check tolerance cm3/1000s.	: +- 4.5	<u> </u>
Spreed	· ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	LOW IDLE
Tolerance cm3/1000 strokes	: 8.0	+ Rated speed rpm : 300
Check tolerance		rack travel mm : 6.20
cm3/1000s.	: 12.0	+ Tolerance mm : + 0.30 + Del. quantity
Aneroid pressure		+ cm3/1000 strokes : 16.0
hPa	: 1600 : 800	Tolerance + cm3/1000 strokes : +- 3.0
Rated speed rpm Del. quantity	· QUU	+ Check tolerance
cm3/1000 strokes	: 269.0	cm3/1000s. : +- 6.0
Tolerance cm3/1000 strokes	: +- 2.0	+ Spreed + Tolerance
Check tolerance		+ cm3/1000 strokes : 6.0
cm3/1000s. Spreed	: +- 5.0	+ Check tolerance + cm3/1000s. : 10.0
Tolerance	. 20	†
cm3/1000 strokes	: 8.0	†

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.04.96 Test oil : ISO 4113

Combination No. : 0 402 648 904

Injection pump

Pump designation : PE8P120A320LS7801-1

EP type number : 0 412 628 818

Governor

Governer design. : RQV350...1050PA866

: -9

Governer no. : 0 421 813 906

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : 0M442 LA
Power KW : 260.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

uneck

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm: 13.90

Rack travel in mm: 13.90

Tolerance mm : + 0.10
Tolerance mm : + 0.10

Del. quantity	+ guide sleeve
cm3/1000 strokes : 202.0	+ travel mm : 10.05
CHOT TODO SETONES . COLTO	
	+ Tolerance mm : + 0.25
Tolerance	+
cm3/1000 strokes : + 1.0	
	+ GUIDE SLEEVE POSITION
Check tolerance	
	Dotted aread man . 1170
cm3/1000s. : +- 4.0	+ Rated speed rpm : 1130
	†
Spreed	+ Rack travel in mm : 17.25
Tolerance	→ Tolerance mm : ← 0.75
cm3/1000 strokes : 5.0	+
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
	T FOLL LOAD DELIVER! AT FOLL LOAD STOP
cm3/1000s. : 9.0	<b>†</b>
	+ Rated speed rpm : 500
Rated speed rpm : 350	+ Aneroid pressure
	+ hPa : 700
Rack travel in mm: 5.80	Del. quantity
	+ cm3/1000 strokes : 202.0
Del. quantity	+ Tolerance
cm3/1000 strokes : 19.0	+ cm3/1000 strokes : +- 1.0
Tolerance	+ Check tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 6.0	+ Tolerance
Spreed	+ cm3/1000 strokes : 5.0
Tolerance	+ Check tolerance
cm3/1000 strokes : 6.0	+ cm3/1000s. : 9.0
Check tolerance	1
cm3/1000s. : 10.0	1
· 10.0	
·	CONTROL I SUED
4-1	+ CONTROL LEVER
(B) SETTING OF INJECTION PUMP	<del>†</del>
WITH GOVERNOR	+ control lever
	position degree : 99.0
	tolerance degree : +- 4.0
CUITAR OF ERVIC TRAVEL	totalite degree 4.0
GUIDE SLEEVE TRAVEL	T DATED COSED
750	RATED SPEED
Rated speed rpm : 350	†
guide steeve	rack travel mm : 11.90
travel mm : 1.55	Rated speed rpm : 1095
Tolerance mm : + 0.25	Tolerance 1/min : + 5
- TO THE PROPERTY OF THE PERSON OF THE PERSO	
Detail exceed from . 4407	T most though mm . / 00
Rated speed rpm : 1107	rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1175
travel mm : 8.05	Tolerance 1/min : +- 15
Tolerance mm : + 0.25	+
	rack travel mm : 0.75
Rated speed rpm : 570 -	Tolerance mm : +- 0.75
	Rated speed rpm : 1300
guide sleeve	T rated speed thin . 1000
travel mm : 3.55	†
Tolerance mm : +- 0.25	†
-	
Rated speed rpm : 900 -	LOW IDLE
guide steeve	1
travel mm : 5.65	$oldsymbol{1}$
	- control dover
Tolerance mm : +- 0.25	control lever
, <u>,</u>	position degree : 49.0
Rated speed rpm : 1204	tolerance degree : + 4.0
	·

H20

Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.80 : + 0.10
Rated speed rpm	: 100
CRT mm min.	: > 7.40
Rated speed rpm	: 450
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 500 : 13.90 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.90 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 14.40 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 400 : -1.50 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 500 : -0.60 : +- 0.10
Pressure hPa rack travel mm Tolerance mm	: 925 : 0.25 : ← 0.05
START CUT-OUT	<del>na ana gy</del> nnana an an an an an an an an an an an a
Rated speed rpm Rated speed rpm	: > 100 : < 270
Rated speed rpm Rated speed rpm Check speed 1/min Check	: > 100 : < 270 : > 80

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa	: 1100
Rated speed rpm	: 1050
Del. quantity	
cm3/1000 strokes	: 182.5
	102.5
Tolerance	
cm3/1000 strokes	: <del>+-</del> 1.5
Check tolerance	
cm3/1000s.	: +- 4.5
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	. 0.0
	. 12.0
cm3/1000s.	: 12.0
Aneroid pressure	
hPa	: 1100
Rated speed rpm	: 750
Del. quantity	
cm3/1000 strokes	: 215.0
Tolerance	
cm3/1000 strokes	: <del>+</del> 2.0
	. +- 2.0
Check tolerance	
cm3/1000s.	: <del>+-</del> 5.0
Spreed	
Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0
	. 12.0
Aneroid pressure	
	•
hPa	500
Rated speed rpm	: 500
Del. quantity	
cm3/1000 strokes	: 144.0
Tolerance	
cm3/1000 strokes	: +- 1.0
Check tolerance	
cm3/1000s.	: +- 4.0
	4.0
Spreed	
Tolerance	2.5
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0
BREAKAWAY	
Dook though in	. 11 00
Rack travel in mm	
Rated speed rpm	: 1095
Tolerance 1/min	: +- 5

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 230.0
Tolerance
cm3/1000 strokes : +- 10.0
Check tolerance
cm3/1000s. : +- 14.0

LOW IDLE

Rated speed rpm 350 5.80 rack travel mm : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes 3.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.08.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 648 967B

Injection pump

Pump designation : PE8P120A320LS7871 EP type number : 0 412 628 877

Governor

Governer design. : RQV300...1050PA1078

: -1K

: 0 421 815 361 Governer no.

Cust. part No. : 9278734

Customer-spec. information : LIEBHERR Customer : D 9408 TI-E Motor Power KW : 400.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Tolerance mm Prestroke mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-8-7-2-6

: - 3- 5- 4

: 0-45-90-135-180 Phasing : -225-270-315

Tolerance : **←** 0.30

Check

tolerance "NW : + - 0.50

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm: 11.80

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 283.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolérance cm3/1000 strokes : 5.0	travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000S. : 9.0	+
Rated speed rpm : 400	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 4.50 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 20.0 Tolerance	Rated speed rpm : 950 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 283.5 Tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 6.0 Spreed Tolerance	- cm3/1000s. : + 4.0 - Spreed - Tolerance
cm3/1000 strokes : 6.0 Check tolerance	cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : 10.0	+ cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 115.0 tolerance degree : +- 4.0
Rated speed rpm : 300 guide sleeve travel mm : 1.69	RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 10.85 Rated speed rpm : 995
Rated speed rpm : 1117 guide sleeve	Tolerance 1/min : + 5
travel mm : 10.38 Tolerance mm : + 0.25	+ rack travel mm : 4.00 + Rated speed rpm : 1105 + Tolerance 1/min : + 15
Rated speed rpm : 746 guide sleeve travel mm : 6.20	+ rack travel mm : 0.50 + Tolerance mm : + 0.50
Tolerance mm : + 0.25	Rated speed rpm : 1165
Rated speed rpm : 353 guide sleeve	
travel mm : 2.45 Tolerance mm : + 0.25	LOW IDLE
Rated speed rpm : 403 - guide sleeve - travel mm : 3.18	control lever position degree : 78.0 tolerance degree : +- 4.0
Tolerance mm : + 0.25	Testing:
Rated speed rpm : 450 - guide steeve	Rated speed rpm : 400
travel mm : 3.66 - Tolerance mm : +- 0.25 -	rack travel mm : 4.50 Tolerance mm : +- 0.10
Rated speed rpm : 1320	Rated speed rpm : 500

		+ Tolerance
TORQUE CONTROL		- cm3/1000 strokes : +- 3.0 Check tolerance
TONGOL CONTROL		- cm3/1000s. : + 6.0
Rated speed rpm	: 950	+
rack travel mm	: 11.80 : +- 0.05	+ Aneroid pressure
Tolerance mm	: 4- 0.05	+ hPa : - Rated speed rpm : 500
Rated speed rpm	: 800	+ Del. quantity
rack travel mm	: 11.65	+ cm3/1000 strokes : 270.0
Tolerance mm	: ← 0.10	Tolerance
Dahad awasal assu	. 400	+ cm3/1000 strokes : + 3.0
Rated speed rpm rack travel mm	• 10.25	+ Check tolerance + cm3/1000s. :+- 6.0
Tolerance mm	: + 0.10	+
		Aneroid pressure
Rated speed rpm		+ hPa : -
rack travel mm	9.75	Rated speed rpm : 500
Tolerance mm	: + 0.10	+ Del. quantity
		+ cm3/1000 strokes : 225.0 + Tolerance
ANERŌID/ALTITUDE		+ cm3/1000 strokes : + 1.0
COMPENSATOR TEST		+ Check tolerance
		+ cm3/1000s. : +- 4.0
		Spreed
SETTING		† Tolerance
Rated speed rpm	• 050	+ cm3/1000 strokes : 8.0 + Check tolerance
Pressure hPa	: 1600	+ cm3/1000s. : 12.0
rack travel mm		1
Tolerance mm		
		+ BREAKAWAY
EASUREMENT		†
Pressure hPa	• -	Rack travel in mm: 10.85
Rated speed rpm	950	+ Rated speed rpm : 995
rack travel mm	: 9.35	+ Tolerance 1/min : +- 5
Tolerance mm	: + 0.10	†
Rated speed rpm	: 950	I
TO A COUNTY OF THE PARTY OF THE	v r.ur⊎r	+ STARTING FUEL DELIVERY
Pressure hPa	: 900	+
rack travel mm	: 10.80	+ Rated speed rpm : 100
olerance mm	: + 0.05	+ rack travel mm : 9.60 + Tolerance mm : +- 0.20
ressure hPa	: 700	+ Tolerance mm : +- 0.20 + Del. quantity
ack travel mm	: 9.35	+ cm3/1000 strokes : 170.0
Tolerance mm	: + 0.10	+ Tolerance
		+ cm3/1000 strokes : +- 10.0
		+ Check tolerance
		+  cm3/1000s. : + 14.0
UEL DELIVERY CHAP	RACTERISTICS	<del>-</del>
		†
		I ION TOLE
Pa .	: -	LOW IDLE
nPa Rated speed rpm	: - : 800	+
Aneroid pressure nPa Rated speed rpm Del. quantity cm3/1000 strokes		+

Del. quantity		
cm3/1000 strokes	:	20.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000s.	:	10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 19.04.96 : ISO 4113 Test oil

Combination No. : 0 402 746 649

Injection pump

Pump designation : PES6P120A320RS7359 EP type number : 0 412 726 925

Governor

Governer design. : RQ275/1050PA1217 Governer no. : 0 421 801 782

Cust. part No. : CCEP5150A 66 : -225/228

Customer-spec. information

Customer : RENAULT V.I. : MIDRO62045 I-B41 Motor

Power KW : 185.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 220 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.70 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.25 Tolerance mm : + 0.75

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : ← 0.30 Check

: **←** 0.50 tolerance °NW

Start of delivery mark

*NW after s.o.d. : -0.95 : +- 0.50 Tolerance Check

tolerance °NW :  $\leftarrow$  0.75

: 1 Barrel no.

### BASIC SETTING

Rated speed rpm : 600

	•		
<b>D</b> ) An) An	an (n	guide sleeve	
Rack travel in mm : _ '		travel mm	: 4.37
Tolerance mm : +-	0.05	Tolerance mm	: +- 0.10
Del. quantity	· · · · · · · · · · · · · · · · · · ·	Rated speed rpm	: 490
cm3/1000 strokes :	186.0 +	guide sleeve	
	+	travel mm	: 6.00
Tolerance	+	Tolerance mm	: <del>←</del> 0.10
cm3/1000 strokes : +-	1.0 +		
		Rated speed rpm	: 1340
Check tolerance	+	guide sleeve	
cm3/1000s. : +-	4.0	travel mm	: 11.50
	<del>_</del>	Tolerance mm	: +- 0.50
Spreed	+		
Tolerance	+	<del></del>	
cm3/1000 strokes :	5.0	GUIDE SLEEVE POSIT	rion
	+		
Check tolerance	-	Rated speed rpm	: 600
cm3/1000s. :	9.0	in a second production of the second productio	
	1	Rack travel in mm	: 20.00
Rated speed rpm : 2	275	Tolerance mm	: + 0.80
Tarea opeca i pin	1	1000121100 1141	0.00
Rack travel in mm : -	-6.10		
Tolerance mm : +		FILL LOAD DELTVERY	AT FULL LOAD STOP
Del. quantity	1	TOLL COMP DELIVERY	AT TOLL LOAD OTO
cm3/1000 strokes :	33.0	Rated speed rpm	: 600
Toterance	1	Aneroid pressure	. 000
cm3/1000 strokes : +-	20 I	hPa	: 1000
Check tolerance	7	Del. quantity	. 1000
cm3/1000s. : +-	5.0 I	cm3/1000 strokes	. 194.0
	7.0	Tolerance	. 160.0
Spreed	<b>T</b>	cm3/1000 strokes	: +- 1.0
Tolerance	8.0		: +- 1.0
cm3/1000 strokes :	7	Check tolerance	
Check tolerance	12.0	cm3/1000s.	: + 4.0
cm3/1000s. :	12.0	Spreed	
	†	Tolerance	<b>5.0</b>
(T) ATTOMICAL OF THE TOTAL	, n	cm3/1000 strokes	: 5.0
(B) SETTING OF INJECTION	1 PUMP †	Check tolerance	2.0
WITH GOVERNOR	+	cm3/1000s.	: 9.0
	†		
	+		
GUIDE SLEEVE TRAVEL	+		
_	<u>,</u>	CONTROL LEVER	
Rated speed rpm : 2	<del>'</del>		
guide sleeve	+	control lever	
	1.37	position degree	
Tolerance mm : +-	0.10 +	tolerance degree	: +- 4.0
	+		
The second secon	37 +	RATED SPEED	
guide sleeve	+		
	6.37	rack travel mm	: -1.00
Tolerance mm : +-	0.10	Rated speed rpm	: 1130
	+	Tolerance 1/min	<b>: +</b> 5
Rated speed rpm : 10	50		
guide sleeve	+	rack travel mm	: -8.40
	6.00	Rated speed rpm	: 1245
Tolerance mm : +-		Tolerance 1/min	: + 15
i was write with the control of the	1		
Rated speed rom : 3	91	rack travel mm	: -11.90
Rated speed rpm : 3	91	rack travel mm Tolerance mm	: -11.90 : +- 0.50

Rated speed rpm	: 1350	+	
		Ţ	START CUT-OUT
LOW IDLE		†	Rated speed rpm : > 100 Rated speed rpm : < 195
control lever position degree tolerance degree	: 252.0 : +- 4.0	‡	Check speed 1/min : > 80 Check
esting:		‡	speed 1/min : < 215
ated speed rpm ack travel mm	: -6.10	<b>, †</b>	FUEL DELIVERY CHARACTERISTICS
olerance mm		‡	Aneroid pressure hPa : 1000 Rated speed rpm : 1050
ack travel mm ated speed rpm olerance 1/min	<b>:</b> 385	‡	Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 191.0
ated speed rpm		1	Tolerance cm3/1000 strokes : +- 3.0
RT mm min.		+	Check tolerance cm3/1000s. : +- 6.0
ORQUE CONTROL		<u> </u>	Aneroid pressure hPa : -
ated speed rpm	: 600	+	Rated speed rpm : 500 Del. quantity
ted speed rpm lerance mm		‡	cm3/1000 strokes : 142.0 Tolerance cm3/1000 strokes : +- 1.0
EROID/ALTITUDE			Check tolerance cm3/1000s. : +- 4.0
OMPENSATOR TEST		‡	BREAKAWAY
SETTING		‡	Mart &
ated speed rpm ressure hPa	: 500 : 1000	+	Rack travel in mm : -1.00 Rated speed rpm : 1130 Tolerance 1/min : +- 5
EASUREMENT		7	
ressure hPa ated speed rpm	: - : 500	‡	STARTING FUEL DELIVERY
ack travel mm olerance mm	: −1.50 : +- 0.20	†	Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 165.0
ated speed rpm	: 500	Ī	Tolerance cm3/1000 strokes : +- 15.0
ressure hPa ack travel mm olerance mm	: 320 : -0.45 : + 0.15	+	Check tolerance cm3/1000s. : +- 19.0
ressure hPa ack travel mm blerance mm	: 160 : −1.20 : + 0.05	† † + +	LOW IDLE

Rated speed rpm	•	275
rack travel mm	:	-6.10
Tolerance mm	: +-	0.20
Del. quantity		
cm3/1000 strokes	:	33.0
Tolerance		
cm3/1000 strokes	; +	2.0
Check tolerance		
cm3/1000S.	: +	5 <b>.0</b>
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.04.96 Test oil : ISO 4113

Combination No. : 0 402 746 953

Injection pump

Pump designation : PES6P12OA32ORS7294 EP type number : 0 412 726 895

Governor

Governer design. : RQV275...1000PA1001

: -1

Governer no. : 0 421 813 936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 063540 J/3

Power KW : 306.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 079

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05
Check

uneck

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 13.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.50

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : + 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.70 Tolerance mm : + 0.05

,	Detail amond may 207
Del. quantity	- Rated speed rpm : 393 - guide sleeve
cm3/1000 strokes : 309.0	travel mm : 2.99
THE TAGE OF GROOT	Tolerance mm : +- 0.20
Tolerance	×
cm3/1000 strokes : +- 1.0	- Rated speed rpm : 490
	- guide sleeve
Check tolerance	travel mm : 3.81
cm3/1000s. : +- 4.0	Tolerance mm : +- 0.20
Spreed	Rated speed rpm : 1370
Tolerance	guide steeve
cm3/1000 strokes : 5.0	- travel mm : 11.50
	- Tolerance mm : +- 0.50
Check tolerance	
cm3/1000s. : 9.0	CUTOR OF FEUR DOCTTON
Rated speed rpm : 300	GUIDE SLEEVE POSITION
Rated speed rpm : 300	- Rated speed rpm : 1185
Rack travel in mm : -8.60	nated speed this . 1103
Tolerance mm : +- 0.20	Rack travel in mm: 12.60
Del. quantity	Tolerance mm : +- 1.30
cm3/1000 strokes : 30.0	<u> </u>
Tolerance	
cm3/1000 strokes : +- 2.0 +	- FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	
cm3/1000s. : +- 6.0	- Rated speed rpm : 600
Spreed + Tolerance +	- Aneroid pressure - hPa : 1000
cm3/1000 strokes : 8.0	- Del. quantity
Check tolerance	- cm3/1000 strokes : 309.0
cm3/1000s. : 12.0	- Tolerance
4	- cm3/1000 strokes : + 1.0
+	- Check tolerance
(B) SETTING OF INJECTION PUMP	-  cm3/1000s. : +- 4.0
WITH GOVERNOR	- Spreed
	- Tolerance - cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAVEL	- Check tolerance
GOIDE OCCEVE THAVEE	- cm3/1000s. : 9.0
Rated speed rpm : 275	•
guide sleeve	-
travel mm : 1.29	20017001 1 5UF5
Tolerance mm : +- 0.10	- CONTROL LEVER
Rated speed rpm : 1086	- control lever
guide sleeve	- position degree : 302.0
travel mm : 8.46	tolerance degree : +- 4.0
Tolerance mm : +- 0.10 +	
+	- RATED SPEED
Rated speed rpm : 773	
guide sleeve +	rack travel mm : -1.00
travel mm : 6.09	Rated speed rpm : 1080
Tolerance mm : $+$ 0.20	Tolerance 1/min : +- 5
Rated speed rpm : 343	rack travel mm : -9.70
guide steeve	Rated speed rpm : 1220
travel mm : 2.33	Tolerance 1/min : +- 15
Tolerance mm : +- 0.20	
<del>}</del>	rack travel mm : -13.25

Tolerance mm Rated speed rpm		rack travel mm : -0.85 Tolerance mm : + 0.05
LOW IDLE		START CUT-OUT
FOM TOTE		Rated speed rpm : > 100 Rated speed rpm : < 225
control lever position degree tolerance degree		Check - speed 1/min : > 80
Testing:		speed 1/min : < 245
Rated speed rpm rack travel mm Tolerance mm	: 300 : -8.60 : +- 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	+ Aneroid pressure + hPa : 1000 + Rated speed rpm : 1000
CRT mm max.	: < -7.20	Del. quantity cm3/1000 strokes : 286.0
Rated speed rpm	: 370	Tolerance cm3/1000 strokes : +- 3.0
TORQUE CONTROL		
Rated speed rpm	: 600	Aneroid pressure hPa : 1000
Rated speed rpm Tolerance mm		Rated speed rpm : 500 Del. quantity
Rated speed rpm rack travel mm Tolerance mm	: 500 : −5.50 : +- 0.10	- cm3/1000 strokes : 137.0 - Tolerance - cm3/1000 strokes : +- 5.0 - Check tolerance - cm3/1000s. : +- 8.0
ANEROID/ALTITUDE COMPENSATOR TEST		Spreed Tolerance cm3/1000 strokes: 8.0 Check tolerance cm3/1000s.: 12.0
SETTING		Aneroid pressure
Rated speed rpm Pressure hPa	: 500 : 1000	hPa : - Rated speed rpm : 500 Del. quantity
MEASUREMENT		cm3/1000 strokes : 152.0 Tolerance
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: - : 500 : -4.90 : + 0.20	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Rated speed rpm		BREAKAWAY
Pressure hPa rack travel mm Tolerance mm	: 240 : -3.70 : 0.20	Rack travel in mm: -1.00 Rated speed rpm: 1080
Pressure hPa	: 600	+ Tolerance 1/min : +- 5

# STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

### LOW IDLE

Rated speed rpm 300 -8.60 rack travel mm Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : -2.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 23.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 402 946 012

Injection pump

Pump designation : PES6P120A320R\$8031 EP type number : 0 412 926 022

Governor

Governer design. : RQV300...1000PA1181K

Governer no. : 0 421 815 975

Cust. part No. : CCEP 5145A 66-234

Customer-spec. information

Customer : RENAULT V.I. : MIDR 063540 P 41 Motor

Power KW : 300.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar 1.5 Tolerance bar

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

# BEGINNING OF DELIVERY

Test pressure bar: Tolerance bar : + 1.0

Prestroke mm : 5.00 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : <del>+-</del> 0.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : + 0.50

Start of delivery mark

*NW after s.o.d. : -0.17 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

21.00

and maximum rack

19.50 travel Difference ° CS : 2.50

BASIC SETTING

,	
Rated speed rpm : 1000 +	Rated speed rpm : 383
rideed speed i piii . 1000	guide sleeve
	travel mm : 2.42
Rack travel in mm: 13.30 +	Tolerance mm : $\leftarrow$ 0.25
Tolerance mm : +- 0.05	Dahad anad ana 177
Del. quantity	Rated speed rpm : 433 guide sleeve
cm3/1000 strokes : 360.0	travel mm : 2.89
+	Tolerance mm : + 0.25
Tolerance	
cm3/1000 strokes : +- 1.0 +	Rated speed rpm : 530
Check tolerance	guide sleeve travel mm : 3.71
cm3/1000s. : + 4.0	Tolerance mm : +- 0.25
-	TO COT GITTO TIRM
Spreed	Rated speed rpm : 1350
Tolerance +	guide sleeve
cm3/1000 strokes : 5.0	travel mm : 13.50
Check tolerance	Tolerance mm : +- 0.50
cm3/1000s. : 9.0	
+	GUIDE SLEEVE POSITION
Rated speed rpm : 325	
†	Rated speed rpm : 1220
Rack travel in mm: -7.80 + Tolerance mm: + 0.20 +	Rack travel in mm : 12.00
Tolerance mm : + 0.20 + Del. quantity +	Toterance mm : +- 2.00
cm3/1000 strokes : 38.0	Total ariot may
Tolerance	
cm3/1000 strokes : +- 2.0 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	Dated aread way . 1000
cm3/1000s. : + 6.0 + 5	Rated speed rpm : 1000 Aneroid pressure
Tolerance	hPa : 1400
cm3/1000 strokes : 8.0	Del. quantity
Check tolerance +	cm3/1000 strokes : 360.0
cm3/1000s. : 12.0 +	Tolerance
<u>†</u>	cm3/1000 strokes : +- 1.0 Check tolerance
(B) SETTING OF INJECTION PUMP	cm3/1000s. : +- 4.0
WITH GOVERNOR	Spreed
+	Tolerance
	cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAVEL	Check tolerance cm3/1000s. : 9.0
Rated speed rpm : 300	cm3/1000S. : 9.0
guide sleeve +	
travel mm : 1.47	
Tolerance mm : + 0.25 +	CONTROL LEVER
Debad around num : 4002	control lever
Rated speed rpm : 1082 + guide sleeve +	position degree : 295.0
travel mm : 9.30	tolerance degree : +- 4.0
Tolerance mm : +- 0.25 +	
+	RATED SPEED
Rated speed rpm : 797	and the sales and the sales at
guide sleeve + travel mm : 6.08 +	rack travel mm : -1.00 Rated speed rpm : 1105
Tolerance mm : + 0.25	Tolerance 1/min : +- 5
TO COT OCTOO TIME	
100	

		+ Pressure hPa : -
rack travel mm	: -9.30	Rated speed rpm : 1000
		rack travel mm : -5.50
Rated speed rpm Tolerance 1/min	: +- 15	+ Tolerance mm : + 0.20
rocci and minin		Total directions
rack travel mm	-12.80	Rated speed rpm : 1000
Tolerance mm		T Rated speed (pill) . 1000
Rated speed rpm		Pressure hPa : 280
Rated speed Pill	. 1500	T Fressure fire
		+ rack travel mm : -4.50
		† Tolerance mm : + 0.20
1011 701 5		T D
FOM IDTE		+ Pressure hPa : 560
		rack travel mm : -3.00
		+ Tolerance mm : + 0.05
control lever		†
position degree	: 253.0	+
tolerance degree	: <del>+-</del> 4.0	+ START CUT-OUT
		+
Testing:		+ Rated speed rpm : > 175
		Rated speed rpm : < 240
Rated speed rpm	: 325	+
rack travel mm	: -7.80	+ Check
Tolerance mm	: +- 0.10	+ speed 1/min : > 155
		+ Check
Rated speed rpm	: 200	+ speed 1/min : < 260
······································		
CRT mm max.	: < -6.00	
		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 360	-
Nated Speed 1 pill	. 500	Aneroid pressure
		+ hPa : 1400
TORQUE CONTROL		Rated speed rpm : 600
TORQUE CONTROL		+ Del. quantity
Dated aread non	: 1000	+ cm3/1000 strokes : 390.0
Rated speed rpm	: 1000	Tolerance
Data dancada		
Rated speed rpm	. 000	
rack travel mm	: -0.55	+ Check tolerance
Tolerance mm	: +- 0.70	+ cm3/1000s. : + 6.0
<b>0</b> 4 1 !		† • • • • • • • • • • • • • • • • • • •
Rated speed rpm	: 800	+ Aneroid pressure
rack travel mm Tolerance mm	: -0.35	+ hPa : -
Tolerance mm	: <del></del> 0.20	+ Rated speed rpm : 500
		+ Del. quantity
Rated speed rpm	: 350	+ cm3/1000 strokes : 201.0
rack travel mm		+ Tolerance
Tolerance mm	: <b>←</b> 0.25	+ cm3/1000 strokes : +- 1.0
		+ Check tolerance
		+ cm3/1000s. : + 4.0
ANEROID/ALTITUDE		
ANEROID/ALTITUDE COMPENSATOR TEST		
		- cm3/1000s. : + 4.0
COMPENSATOR TEST		- cm3/1000s. : + 4.0
		- cm3/1000s. : + 4.0 
COMPENSATOR TEST SETTING	• 1000	## cm3/1000s. : + 4.0  ## BREAKAWAY  ## Rack travel in mm : -1.00
COMPENSATOR TEST SETTING Rated speed rpm	: 1000 : 1400	m3/1000s. : + 4.0  BREAKAWAY  Rack travel in mm : -1.00 Rated speed rpm : 1105
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa	: 1400	## cm3/1000s. : + 4.0  ## BREAKAWAY  ## Rack travel in mm : -1.00
COMPENSATOR TEST SETTING Rated speed rpm	: 1400	m3/1000s. : + 4.0  BREAKAWAY  Rack travel in mm : -1.00 Rated speed rpm : 1105
COMPENSATOR TEST  SETTING  Rated speed rpm Pressure hPa	: 1400	m3/1000s. : + 4.0  BREAKAWAY  Rack travel in mm : -1.00 Rated speed rpm : 1105

Rated speed rpm : 100
rack travel mm : 20.25
Tolerance mm : + 0.75
Del. quantity
cm3/1000 strokes : 190.0
Tolerance
cm3/1000 strokes : + 15.0
Check tolerance
cm3/1000s. : + 19.0

## LOW IDLE

325 Rated speed rpm rack travel mm -7.80 : +- 0.20 Tolerance mm Del. quantity cm3/1000 strokes : 38.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 403 246 044

Injection pump

Pump designation : PES6MW100/720RS1522

: 0 413 206 023 EP type number

Governor

Governer design. : RQV300...1300MW148

: -1

: 0 420 083 322 Governer no.

Cust. part No. : 0250744602

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor : 177.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 089 Test lines

Outside diameter : 8.0 x inside diameter : 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values _____

### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +-1.0

Prestroke mm 4.55 : +- 0.05Tolerance mm Check

: + - 0.10tolerance mm

Rack travel in mm : 20.00 Tolerance mm : + 1.00

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : + 0.50

Check

tolerance "NW : +- 0.75

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 14.45 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 133.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

cm3/1000s.       : 8.0         Rated speed rpm       : 300         Rack travel in mm       : 4.50         Tolerance mm       : + 0.20         pel. quantity       Tolerance mm       : + 2.70         cm3/1000 strokes       : 12.0         Tolerance       Tolerance mm       : + 2.70         Check tolerance       FULL LOAD DELIVERY AT FULL LOAD STOP         Check tolerance       Cm3/1000s.       : + 4.5         Check tolerance       Rated speed rpm       : 1300         Check tolerance       Cm3/1000 strokes       : 1200         Check tolerance       Cm3/1000 strokes       : 133.0         Check tolerance       Cm3/1000 strokes       : 133.0         Check tolerance       Cm3/1000 strokes       : 1.0         Check tolerance       Cm3/1000 strokes       : + 4.0         SETTING OF INJECTION PUMP       Check tolerance         WITH GOVERNOR       Tolerance       Cm3/1000s.       : + 4.0         GUIDE SLEEVE TRAVEL       Check tolerance         Rated speed rpm       : 300       300         guide sleeve       control lever         travel mm       : 9.33       control lever         puide sleeve       control lever       control lever
Rack travel in mm : 4.50 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000 strokes : 2.0 Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 133.0 Check tolerance cm3/1000 strokes : 133.0 Check tolerance cm3/1000 strokes : 133.0 Tolerance cm3/1000 strokes : 133.0 Tolerance cm3/1000 strokes : 1.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.  Spreed Tolerance cm3/1000s.
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Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000 strokes : 133.0 Check tolerance cm3/1000 strokes : 133.0 Check tolerance cm3/1000 strokes : 133.0 Check tolerance cm3/1000 strokes : 1.0 Check tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 4.0 Check tol
Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0  Check tolerance cm3/1000s. : 4.0  Check tolerance cm3/1000s. : 4.0  Check tolerance cm3/1000 strokes : 133.0  Tolerance cm3/1000 strokes : 1.0  Check tolerance cm3/1000s. : + 4.0  Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000s. : + 4.0  Check tolerance cm3/1000s. : + 4.0  Check tolerance cm3/1000s. : + 4.0  Check tolerance cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000s. : + 4.0  Check tolerance cm3/100os.
Aneroid pressure   HPa
Cm3/1000 strokes : 2.0 Check tolerance Cm3/1000s. : 4.0  Check tolerance Cm3/1000 strokes : 133.0  Tolerance Cm3/1000 strokes : +- 1.0  Check tolerance Cm3/1000s. : +- 4.0  WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 0.92 Tolerance mm : +- 0.25  Rated speed rpm : 9.33 Tolerance mm : +- 0.25  Rated speed rpm : 9.33 Tolerance mm : +- 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : +- 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 13.45 Rated speed rpm : 13.45 Tolerance mm : +- 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45
Cm3/1000s. : 4.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 0.92 Tolerance mm : + 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : + 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 1345 Rated speed rpm : 1345 Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 1345 Rated speed rpm : 1345
Check tolerance cm3/1000s. : +- 4.0 WITH GOVERNOR  WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 0.92 Tolerance mm : +- 0.25  Rated speed rpm : 355 guide sleeve travel mm : 9.33 tolerance degree : 120.0 tolerance degree : +- 4.0 Tolerance mm : +- 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 1078 Rated speed rpm : 13.45 Rated speed rpm : 1345
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 300 guide sleeve travel mm : 0.92 Tolerance mm : + 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : + 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45
Rated speed rpm : 300 guide sleeve travel mm : 0.92 Tolerance mm : + 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : + 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45 Rated speed rpm : 13.45
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Travel mm : 0.92 Tolerance mm : + 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : + 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  Rated speed rpm : 13.45 travel mm : 13.45 Rated speed rpm : 13.45
Tolerance mm : + 0.25  Rated speed rpm : 1355 guide sleeve travel mm : 9.33 Tolerance mm : + 0.25  Rated speed rpm : 1078 guide sleeve travel mm : 7.06  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.45 Rated speed rpm : 1345
guide sleeve
Tolerance mm : +- 0.25  Rated speed rpm : 1078 guide sleeve
Rated speed rpm : 1078 guide sleeve rack travel mm : 13.45 travel mm : 7.06 Rated speed rpm : 1345
travel mm : 7.06 + Rated speed rpm : 1345
<del>-</del>
Rated speed rpm : 514 + rack travel mm : 4.00 guide sleeve + Rated speed rpm : 1500
travel mm : 2.14 + Tolerance 1/min : + 15 Tolerance mm : + 0.25 +
Rated speed rpm : 564 + rack travel mm : 0.50 + Tolerance mm : + 0.50
guide sleeve + Rated speed rpm : 1600 travel mm : 2.47
Tolerance mm : + 0.25
Rated speed rpm : 750 + LOW IDLE guide sleeve +
travel mm : 4.02 +
Tolerance mm : + 0.25 + control lever + position degree : 75.0 Rated speed rpm : 1720 + tolerance degree : +- 4.0
guide sleeve + Testing:

		1
Rated speed rom rack travel mm Tolerance mm		FUEL DELIVERY CHARACTERISTICS
Rated speed rpm		Aneroid pressure hPa : 1200
CRT mm min.	: > 5.50	Rated speed rpm : 750 Del. quantity
TODOUE CONTROL		cm3/1000 strokes : 128.0 Tolerance
TORQUE CONTROL	. 4700	+ cm3/1000 strokes : +- 2.0 + Check tolerance
Rated speed rpm rack travel mm Tolerance mm		+ cm3/1000s. : +- 5.0 + Spreed + Tolerance
Rated speed rpm		cm3/1000 strokes : 6.0 Check tolerance
rack travel mm Tolerance mm	: 14.45 : + 0.10	cm3/1000s. : 9.0  Aneroid pressure
ANEROID/ALTITUDE COMPENSATOR TEST		
COMPENSATOR TEST		+ Del. quantity + cm3/1000 strokes : 46.0 + Tolerance
SETTING		cm3/1000 strokes : + 1.0 + Check tolerance
Rated speed rpm Pressure hPa rack travel mm	: 500 : 1200 : 14.45	
Tolerance mm	: ← 0.10	BREAKAWAY
		†
MEASUREMENT		Rack travel in mm: 13.45
MEASUREMENT Pressure hPa Rated speed rpm Tolerance mm	: - : 500 : + 0.05	Rack travel in mm: 13.45 Rated speed rpm: 1345 Tolerance 1/min: +- 5
Pressure hPa Rated speed rpm	: ← 0.05	Rated speed rpm : 1345 Tolerance 1/min : + 5
Pressure hPa Rated speed rpm Tolerance mm	: ← 0.05	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity
Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: ← 0.05 : 500 : 750 : 4.80 : ← 0.10 : 300 : 1.50	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 strokes : + 5.0
Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm	: ← 0.05 : 500 : 750 : 4.80 : ← 0.10 : 300	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 160.0 Tolerance
Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm	: + 0.05 : 500 : 750 : 4.80 : + 0.10 : 300 : 1.50 : + 0.10	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance
Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm Tolerance mm	: + 0.05 : 500 : 750 : 4.80 : + 0.10 : 300 : 1.50 : + 0.10	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance
Pressure hPa Rated speed rpm Tolerance mm  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm  Pressure hPa rack travel mm  Tolerance mm  START CUT-OUT  Rated speed rpm	: + 0.05 : 500 : 750 : 4.80 : + 0.10 : 300 : 1.50 : + 0.10	Rated speed rpm : 1345 Tolerance 1/min : + 5  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 160.0 Tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0

Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 18.04.96 Edition Test oil : ISO 4113

Combination No. : 0 403 436 114A

Injection pump

Pump designation : PES6MW100/320/3RS119

: 4-1

EP type number : 0 413 406 221

Governor

Governer design. : RQV300...1300MW108K

: 0 420 083 998 Governer no.

Cust. part No. :

Customer-spec, information : PERKINS Customer : 180 TI Motor

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : +- 1.5

: 1 680 750 008 Test lines

Outside diameter : 6.0 x inside diameter: 2.0 600 x length mm

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

tolerance mm

#### BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar

Prestroke mm 3.35 : +- 0.05Tolerance mm Check

Rack travel in mm: 13.00 Tolerance mm : + 1.00

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300 : +- 0.50

: + 0.10

Tolerance Check

tolerance "NW : + 0.75

Start of delivery blocking

46.50 *NW before FB :

Barrel no. 1

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 13.50 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 131.5

Tolerance cm3/1000 strokes : + 1.0

	Į	musala, al nava
<b>-1</b> 1		guide sleeve
Check tolerance cm3/1000s.	+ 4.0	travel mm : 3.34 Tolerance mm : +- 0.25
	<del> </del>	
Spreed	-	Rated speed rpm : 1640
Tolerance	1	guide steeve
cm3/1000 strokes :	40	travel mm : 13.50
the root strokes .	1.0	Tolerance mm : +- 0.50
Check tolerance		70 CCT GITCC TIME 1 5.50
	7.5	
(1112) 10003.	(·)	CHINE CLEENE DOCTTION
Bakad award man i	700	GUIDE SLEEVE POSITION
Rated speed rpm :	300 +	n
	, <u></u>	Rated speed rpm : 1400
Rack travel in mm :	6.80	
Tolerance mm :	+ 0.20 +	Rack travel in mm : 10.00
Del. quantity	+	Tolerance mm : +- 2.70
cm3/1000 strokes :	22.0	
Tolerance	1	
cm3/1000 strokes :	+ 2.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	1	TOLE LOND DECIDENT AT TOLE COND DIO
	+- 4.5	Rated speed rpm : 1300
	T 4.3	
Spreed	Ť	Aneroid pressure
Tolerance	<b>.</b>	hPa : 900
cm3/1000 strokes :	3.5	Del. quantity
Check tolerance	+	cm3/1000 strokes : 131.5
cm3/1000s. :	5.5	Tolerance
	+	cm3/1000 strokes : +- 1.0
	+	Check tolerance
(B) SETTING OF INJE	CTION PUMP	cm3/1000s. : + 4.0
	···	
WITH GOVERNOR	+	Spreed
WITH GOVERNOR	1	Spreed Tolerance
MITH GOVERNOR	<u> </u>	Tolerance
	<del></del> ‡	Tolerance cm3/1000 strokes : 4.0
GUIDE SLEEVE TRAVEL		Tolerance cm3/1000 strokes : 4.0 Check tolerance
GUIDE SLEEVE TRAVEL	+	Tolerance cm3/1000 strokes : 4.0
GUIDE SLEEVE TRAVEL Rated speed rpm :	300	Tolerance cm3/1000 strokes : 4.0 Check tolerance
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve	300	Tolerance cm3/1000 strokes : 4.0 Check tolerance
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve travel mm :	300	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve travel mm :	300	Tolerance cm3/1000 strokes : 4.0 Check tolerance
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER
GUIDE SLEEVE TRAVEL Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm :	300 1.78 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm :	300 1.78 +- 0.25 1354 10.13	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER control lever
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : 4.0
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm :	300 1.78 +- 0.25 1354 10.13	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354 10.13 + 0.25 891	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 6.43	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354 10.13 + 0.25 891	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 6.43	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354 10.13 + 0.25 891 + 6.43 + 0.25 307	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 1.83	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : guide sleeve travel mm : Tolerance mm :  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve	300 1.78 + 0.25 1354 10.13 + 0.25 891 + 6.43 + 0.25 307	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 6.43 + 0.25 307 1.83 + 0.25	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 1.83	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : + 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 + 1.83 + 0.25 357	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 1.83 + 0.25 357 2.46	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : + 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 + 1.83 + 0.25 357	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : + 0.50
GUIDE SLEEVE TRAVEL  Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm : Rated speed rpm : guide sleeve travel mm : Tolerance mm :	300 1.78 + 0.25 1354 10.13 + 0.25 891 - 6.43 + 0.25 307 1.83 + 0.25 357 2.46	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.5  CONTROL LEVER  control lever position degree : 120.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 12.50 Rated speed rpm : 1345 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1475 Tolerance 1/min : + 15  rack travel mm : 0.50 Tolerance mm : 0.50 Tolerance mm : + 0.50

		† Pressure hPa † rack travel mm	
control lever position degree	: 77.0	Tolerance mm	: +- 0.15
tolerance degree		Pressure hPa	: 180 : 9.60
Testing:		rack travel mm Tolerance mm	: +- 0.05
Rated speed rpm	: 300	TAND THE TOTAL	
rack travel mm Tolerance mm	: + 0.10	START CUT-OUT	. 400
Rated speed rpm	: 200	+ Rated speed rpm + Rated speed rpm	
CRT mm min.	: > 8.50	Check speed 1/min	: > 170
TORQUE CONTROL		Check speed 1/min	: < 250
Rated speed rom	: 1300	‡ <u></u>	
Rated speed rpm rack travel mm Tolerance mm	: 13.50 : + 0.05	FUEL DELIVERY CI	HARACTERISTICS
		+ Aneroid pressure	e : 900
Rated speed rpm rack travel mm	12.75	+ hPa + Rated speed rpm	
Tolerance mm	: +- 0.10	Del. quantity cm3/1000 strokes	
Rated speed rpm rack travel mm Tolerance mm	: 500	+ Tolerance	
rack travel mm	: 11.50	+ cm3/1000 stroke: + Check tolerance	
Rated speed rpm		cm3/1000s.	
rack travel mm	: 13.10	+ Tolerance	
rack travel mm Tolerance mm	: + 0.15	+ cm3/1000 strokes	
Rated speed rpm	: 700	+ Check tolerance cm3/1000s.	
Rated speed rpm rack travel mm Tolerance mm	: 12.50	+	
Tolerance mm	: +- 0.15	+ Aneroid pressure + hPa	• • 900
	, <u>.</u>	Rated speed rpm	
ANEROID/ALTITUDE		+ Del. quantity	
COMPENSATOR TEST		+ cm3/1000 strokes + Tolerance	: 109.0
		+ cm3/1000 strokes	s : +- 2.0
SETTING		+ Check tolerance	_
Dated aroud arm	. 1700	+ cm3/1000s.	: +- 5.0
Rated speed rpm Pressure hPa	: 1300 : 900	Aneroid pressure	4
rack travel mm	: 13.50	+ hPa	: -
Tolerance mm	: +- 0.05	+ Rated speed rpm	: 500
MEASUREMENT		+ Del. quantity + cm3/1000 strokes + Tolerance	: 60.0
Pressure hPa	: -	toterance cm3/1000 strokes	· : + 1.0
Rated speed rpm	: 1300	+ Check tolerance	
rack travel mm	: 8.80	+ cm3/1000s.	: <del>+</del> 3.0
Tolerance mm	: +- 0.10	Ī	
Rated speed rpm	: 1300	BREAKAWAY	

Rack travel in mm: 12.50
Rated speed rpm: 1345
Tolerance 1/min: +- 5

### STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : + 1.00
Del. quantity
cm3/1000 strokes : 85.0
Tolerance
cm3/1000 strokes : + 7.0
Check tolerance
cm3/1000s. : + 10.0

### LOW IDLE

Rated speed rpm 300 6.80 rack travel mm Tolerance mm 0.20 Del. quantity cm3/1000 strokes : 22.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance 5.5 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.04.96 Edition : ISO 4113 Test oil

Combination No. : 0 403 446 249

Injection pump

Pump designation : PES6MW100/720RS1197

EP type number : 0 413 406 185

Governor

Governer design. : RQV325...1350MW109K

Governer no. : 0 420 083 997

Cust. part No.

Customer-spec. information

Customer : IVECO-FIAT : 8060.45.6000 Motor

Power KW : 169.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

: 4.05 Prestroke mm Tolerance mm : + 0.05Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 : + 0.50Tolerance

Check

: +- 0.75 tolerance °NW

### BASIC SETTING

Rated speed rpm : 1350

Rack travel in mm: 14.05 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 102.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance 3.0 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance	. 40	Tolerance mm : +- 0.50
cm3/1000S.	; 6.0	GUIDE SLEEVE POSITION
Rated speed rpm Rack travel in m		Rated speed rpm : 1475
Tolerance mm Del. quantity	: +- 0.20	Rack travel in mm : 13.00 Tolerance mm : +- 2.00
cm3/1000 strokes Tolerance cm3/1000 strokes		FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s.		Rated speed rpm : 1350
Spreed Tolerance	. + 4.5	Aneroid pressure hPa : 850
cm3/1000 strokes Check tolerance		Del. quantity cm3/1000 strokes : 102.0
cm3/1000s.		Tolerance cm3/1000 strokes : +- 1.0
(B) SETTING OF IN	NJECTION PUMP	Check tolerance cm3/1000s. : + 3.0 Spreed
CUTAL OF LETT TOU		Tolerance - cm3/1000 strokes : 3.5 - Check tolerance
GUIDE SLEEVE TRAN		- cm3/1000s. : 6.0
guide sleeve travel mm	: 1.90	
Tolerance mm	: +- 0.25	CONTROL LEVER
Rated speed rpm guide sleeve travel mm	: 1411 : 10.31	control lever position degree : 120.0 tolerance degree : +- 4.0
Tolerance mm		RATED SPEED
Rated speed rpm guide sleeve	-	rack travel mm : 13.00
travel mm Tolerance mm	: 5.05 : +- 0.25	Rated speed rpm : 1440 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	: 346	rack travel mm : 4.00 Rated speed rpm : 1550
travel mm Tolerance mm	: 2.27 : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm guide sleeve	: 396	rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1650
travel mm Tolerance mm	: 3.13 : +- 0.25	- National Special Pills
Rated speed rpm guide sleeve	: 380	LOW IDLE
travel mm Tolerance mm	: 3.01 : +- 0.25	control lever
Rated speed rpm	: 1640	position degree : 82.0 tolerance degree : +- 4.0
guide sleeve travel mm	: 13.50	Testing:

		+ Rated speed rpm : > 265
Rated speed rpm rack travel mm Tolerance mm	: 330 : 8.20 : +- 0.10	Check speed 1/min : > 275
Rated speed rpm	: 200	FUEL DELIVERY CHARACTERISTICS
CRT mm min.	: > 10.00	
TORQUE CONTROL		Rated speed rpm : 1200
Rated speed rpm rack travel mm Tolerance mm	: 14.05	Aneroid pressure hPa : 850 Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 102.0 Tolerance cm3/1000strokes : +- 1.5 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000strokes : 5.0 Check tolerance cm3/1000s. : 7.0  Aneroid pressure hPa : 850 Rated speed rpm : 1000 Del. quantity cm3/1000 strokes : 102.0 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.0  Aneroid pressure hPa : 850 Rated speed rpm : 700 Del. quantity cm3/1000strokes : +- 1.5 Check tolerance cm3/1000s : +- 4.0
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 13.70	+ Check tolerance + cm3/1000s. : +- 4.0 + Spreed + Tolerance
		cm3/1000 strokes : 5.0 Check tolerance
Rated speed rpm rack travel mm Tolerance mm	: 13.35	cm3/1000s. : 7.0
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.40	+ Aneroid pressure + hPa : 850 + Rated speed rpm : 1000
Tolerance mm	: +- 0.10	Del. quantity cm3/1000 strokes : 102.0
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance cm3/1000 strokes : + 1.5 Check tolerance
2		cm3/1000s. : + 4.0
SETTING Rated speed rom	: 500	Aneroid pressure  hPa : 850 Rated speed rpm : 700
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 13.50	Del. quantity cm3/1000 strokes : 106.0 Tolerance
MEASUREMENT		cm3/1000 strokes : +- 1.5 Check tolerance
Pressure hPa	<u>.</u> —	cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm Tolerance mm		Aneroid pressure hPa : - Rated speed rpm : 500
Rated speed rpm	: 500	Del. quantity cm3/1000 strokes : 76.5
Pressure hPa rack travel mm Tolerance mm		+ Tolerance + cm3/1000 strokes : +- 1.0 + Check tolerance + cm3/1000S. : +- 3.0
Pressure hPa rack travel mm Tolerance mm	: 350 : 12.35 : + 0.05	BREAKAWAY
START CUT-OUT		Rack travel in mm : 13.00 Rated speed rpm : 1440 Tolerance 1/min : +- 5

# STARTING FUEL DELIVERY

100 Rated speed rpm

### WARM-START DELIVERY

100 Rated speed rpm

Del. quantity

65.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : +- 13.0

# COLD-START DELIVERY

100 Rated speed rpm

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +-8.0

Check tolerance cm3/1000s.

: + 10.0

# LOW IDLE

Rated speed rpm 330 8.20 rack travel mm 0.20 Tolerance mm Del. quantity

27.0 cm3/1000 strokes :

Tolerance cm3/1000 strokes

2.0 Check tolerance

4.5 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s. 5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 0 403 476 054

Injection pump

Pump designation : PES6MW100/720RS1144 EP type number : 0 413 406 138

Governor

Governer design. : RSV350...1200MW0A316

: -7

Governer no. : 0 420 085 092

Cust. part No. : 0150747302

Customer—spec. information Customer : MB-NFZ Motor : OM366A

Power KW : 115.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

# BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 81.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  3.0

Spreed Tolerance

cm3/1000 strokes : 3.5

	<del></del>
Check tolerance cm3/1000s. : 6.0	control lever position degree : 103.0
Rated speed rpm : 350	tolerance degree : +- 4.0
Rack travel in mm: 8.60	RATED SPEED
Tolerance mm : +- 0.30	rack travel mm : 1.00
Del. quantity cm3/1000 strokes : 10.0 Tolerance	Tolerance mm : + 0.70 Rated speed rpm : 1450
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1340
cm3/1000s. : +- 4.5	+
Spreed Toterance	+ rack travel mm : 11.00 + Rated speed rpm : 1248
cm3/1000 strokes : 3.5 Check tólerance	Tolerance 1/min : + 8
cm3/1000s. : 5.5	ASSEMBLY GOVERNOR SETTING
	Rated speed rpm : 1240
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ rack travel mm : 11.00
	+ Rated speed rpm : 1289 + Tolerance 1/min : +- 4
	+ Tolerance 1/min : +- 4 + rack travel mm : 4.00
GUIDE SLEEVE POSITION	+ Rated speed rpm : 1241
Rated speed rpm : 800	rack travel mm : 11.00
Rack travel in mm : 0.65	Rated speed rpm : 1290
Tolerance mm : +- 0.35	+ Tolerance 1/min : + 4 + rack travel mm : 4.00
governor spring	Rated speed rpm : 1242
pre~tension click setting x : 3.00	+ Rated speed rpm : 1242 + rack travel mm : 11.00
	+ Rated speed rpm : 1291
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance 1/min : +- 4
Rated speed rpm : 1200	rack travel mm : 4.00
Aneroid pressure	Rated speed rpm : 1243
hPa : - Del. quantity	rack travel mm : 11.00
cm3/1000 strokes : 81.5	Rated speed rpm : 1292
Tolerance cm3/1000 strokes : +- 1.0	+ Tolerance î/min : +- 4 + rack travel mm : 4.00
Check tolerance	+
cm3/1000s. : +- 3.0 Spreed	Rated speed rpm : 1244 rack travel mm : 11.00
Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 1293
Check tolerance cm3/1000s. : 6.0	+ Tolerance 1/min : +- 4 + rack travel mm : 4.00
. 0.0	+
	Rated speed rpm : 1245 rack travel mm : 11.00
CONTROL LEVER	+
	Rated speed rpm : 1294 Tolerance 1/min : +- 4
	•

LOW IDLE	
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 8.60 : +- 0.30
rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm	: 100
CRT mm min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1200 : 12.05 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.55 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.20 : ← 0.10
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: - : 750 : 76.5 : + 1.5 : + 4.0
cm3/1000 strokes Check tolerance cm3/1000s.	: 5.0
#III.7 10003.	. 1.0

Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 100 : 20.00 : + 1.00 : 83.0 : + 5.0 : + 8.0
LOW IDLE	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 350 : 8.60 : + 0.30 : 10.0 : + 2.0 : + 4.5
Tolerance cm3/1000 strokes Check tolerance	: 3.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 083 452

Injection pump

Pump designation : PES6A100D320/3RS2691

: 9 410 230 028 EP type number

Governor

Governer design. : RQV350...1250AB1225R

: 9 420 080 224 Governer no.

Cust. part No.

Customer-spec. information Customer : CUMMINS

Motor : 6 C 8.3L Power KW : 123.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.85 Tolerance mm : + - 0.05

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10.50 travel Tolerance mm : +- 1.50 Difference ° CS : 3.50

### BASIC SETTING

Rated speed rom 1250

Rack travel in mm: 11.25 Tolerance mm : **←** 0.05

Del. quantity

cm3/1000 strokes : 104.5

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0 ; +--

	1	Aneroid pressure	
Spreed		hPa	: -
Tolerance	+	Del. quantity	
cm3/1000 strokes : 3.	5 +	cm3/1000 strokes	: 104.5
Check tolerance		Tolerance cm3/1000 strokes	· <u>-</u> 10
cm3/1000s. : 8.	n I	Check tolerance	; <del></del>
1	1	cm3/1000s.	: +- 3.0
Del. quantity	+	Spreed	
cm3/1000 strokes : 16.	0 +	Tolerance	
Tolerance	, †	cm3/1000 strokes	: 3.5
cm3/1000 strokes : +- 2.0 Check tolerance	Ĭ	Check tolerance cm3/1000s.	: 8.0
cm3/1000s. : +- 4.	5	CIID7 10000.	. 0.0
Spreed	+		
Tolerance	_	<del></del>	
cm3/1000 strokes : 5.	5 +	CONTROL LEVER	
Check tolerance cm3/1000s. : 9.0	n †	control lever	
cm3/1000s. : 9.0	Ī	position degree	: 117.0
	1	tolerance degree	
(B) SETTING OF INJECTION PU	MP +	•	
WITH GOVERNOR	+	RATED SPEED	
		rack travel mm	: 10.20
GUIDE SLEEVE TRAVEL	I	Rated speed rpm	
Const Const Contract	+	Tolerance 1/min	
Rated speed rpm : 1265	+		
guide sleeve	_	rack travel mm	: 4.00
travel mm : 8.50 Tolerance mm : +- 0.10		Rated speed rpm Tolerance 1/min	
Tolerance mm : +- 0.10	Ī	roterance min	: +- 15
Rated speed rpm : 350	+	rack travel mm	: 0.50
guide sleeve	+	Tolerance mm	: + 0.50
travel mm : 2.0	·	Rated speed rpm	: 1500
Tolerance mm : +- 0.25	†		
Rated speed rpm : 900	I		
guide sleeve	+	LOW IDLE	
travel mm : 5.7	<u> </u>		
Tolerance mm : + 0.25	⁵ †		
Rated speed rpm : 500	Ī	control lever position degree	• 70.0
guide steeve	I	tolerance degree	
travel mm : 3.95	<del>5</del> +		
Tolerance mm : + 0.25	5 +	Testing:	
	†	Batad speed nom	. 750
GUIDE SLEEVE POSITION		Rated speed rpm	: 5.40
GOIDE SEELVE 1 GOITION	+	rack travel mm Tolerance mm	: + 0.10
Rated speed rpm : 1250	+		
	<del>,</del> +	Rated speed rpm	: 100
Rack travel in mm: 16.50		CDTin	. > 0.00
Tolerance mm : + 1.30	' I	CRT mm min.	: > 9.80
		Rated speed rpm	: 425
FULL LOAD DELIVERY AT FULL L	OAD STOP		
Dated aread non- 1950	†	TODOUE CONTROL	<del></del>
Rated speed rpm : 1250	1	TORQUE CONTROL	
	l		

Rated speed rpm	: 1250
rack travel mm	: 11.25 : +- 0.05
Tolerance mm	; +- 0.05
Rated speed rpm	; 500
rack travel mm	: 11.85
Tolerance mm	: 11.85 : +- 0.05
Rated speed rpm	: 600
rack travel mm	: 600 : 11.60
Tolerance mm	: +- 0.10
Rated speed rpm	
rack travel mm Tolerance mm	: 11.45 : +- 0.15
TO CET GIFTCE AIRII	. +- 0.15
START CUT-OUT	
Rated speed rpm	: > 100
Rated speed rpm	
Check	: > 80
speed 1/min Check	. > 80
speed 1/min	: < 290
opoou	
FUEL DELIVERY CHA	DACTEDISTICS
TOEL DELIVERY CHA	IKACIEKTOITCO
Aneroid pressure	
hPa	500
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes	: 102.0
Tolerance	. 102.0
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s.	: +- 4.0
Aneroid pressure	
hPa	: -
Rated speed rpm	600
Del. quantity	. 333
cm3/1000 strokes	: 105.0
Tolerance	
cm3/1000 strokes	
	: +- 2.0
Check tolerance	
Check tolerance	: +- 2.0 : +- 4.0
Check tolerance cm3/1000s.	
Check tolerance cm3/1000s. BREAKAWAY	: +- 4.0
Check tolerance cm3/1000s.  BREAKAWAY  Rack travel in mm	: +- 4.0
Check tolerance cm3/1000s.	: + 4.0 : 10.20

STARTING FUEL DEL	IVERY	
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.00 : + 1.00	
Del. quantity cm3/1000 strokes Tolerance	: 171.0	
cm3/1000 strokes Check tolerance	: +- 15.0	
cm3/1000s.	: +- 20.0	
LOW IDLE	······································	
Del. quantity cm3/1000 strokes Tolerance	: 16.0	
cm3/1000 strokes Check tolerance	: +- 2.0	
cm3/1000s.	: <del>+-</del> 4.5	
Spreed Tolerance cm3/1000 strokes Check tolerance	: 5.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22,04.96 Edition Test oil : ISO 4113

: 9 400 083 463 Combination No.

Injection pump

Pump designation : PES6A95D12ORS2834 : 9 400 084 032 EP type number

Governor

Governer design. : RSV400...1100A8C2259

: -1R

: 9 420 083 261 Governer no.

Cust. part No. : 3355079

Customer-spec. information : CUMMINS Customer Motor : 6BT 5.9 L Power KW : 108.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance *C 2.0

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter: 2.0 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : ← 1.0

Prestroke mm 2.80 : +- 0.05Tolerance mm Check tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance @n : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasting

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50 Tolerance mm : +- 1.50 Difference ° CS : 2.50

#### BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 10.95 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 85.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

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	1
Spreed Tolerance	control lever
cm3/1000 strokes : 3.5	tolerance degree : +- 4.0
Check tolerance	RATED SPEED
cm3/1000s. : 8.0	rack travel mm : 9.90
Del. quantity	Rated speed rpm : 1145
cm3/1000 strokes : 11.0	+ Tolerance 1/min : +- 5
Tolerance	†
cm3/1000 strokes : +- 2.0 Check tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 1190
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 15
Spreed	+
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	+ Tolerance mm : +- 0.55
Check tolerance cm3/1000s. 9.0	+ Rated speed rpm : 1350
. , , , , , , , , , , , , , , , , , , ,	Ţ
	1011 701 8
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	LOW IDLE
WITH GOVERNOR	<del> </del>
	+ control lever
OLIVE ALEGER DAOTTON	position degree : 71.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
Rated speed rpm : 800	Setting point w/out bumper spring
Rack travel in mm: 0.65	Rated speed rpm : 400
Tolerance mm : + 0.35	rack travel mm : 4.60
governor spring	† Testing:
pre-tension	resting.
click setting x : 4.50	Rated speed rpm : 400
	rack travel mm : 5.10 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD ST	Tolerance mm : + 0.10
FULL LUAD DELIVERY AT FULL LUAD ST	rack travel mm : 2.00
Rated speed rpm : 1100	Rated speed rpm : 520
Aneroid pressure	Tolerance 1/min : +- 30
hPa : -	100
Del. quantity cm3/1000 strokes : 85.0	Rated speed rpm : 100
Tolerance	CRT mm min. : > 19.00
cm3/1000 strokes : +- 1.0	+
Check tolerance	
cm3/1000s. : +- 3.0	TORQUE CONTROL
Spreed Tolerance	Rated speed rpm : 1100
	+ rack travel mm : 10.95
cm3/1000 strokes : 3.5	+ Tolerance mm : +- 0.05
	+
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 700
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 700 + rack travel mm : 11.55
cm3/1000 strokes : 3.5 Check tolerance cm3/1000s. : 8.0	Rated speed rpm : 700
cm3/1000 strokes : 3.5 Check tolerance	Rated speed rpm : 700 + rack travel mm : 11.55

Tolerance mm : +- 0.05
FUEL DELIVERY CHARACTERISTICS
Aneroid pressure hPa : - Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 93.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0  Aneroid pressure
hPa : - Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 86.0 Tolerance cm3/1800 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0
BREAKAWAY
Rack travel in mm: 9.90 Rated speed rpm: 1145 Tolerance 1/min: +- 5
STARTING FUEL DELIVERY
Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : + 10.0 Check tolerance cm3/1000s. : + 13.0
LOW IDLE
Del. quantity cm3/1000 strokes : 11.0 Tolerance cm3/1000 strokes : + 2.0

Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 223

Injection pump

Pump designation : PES3A80D320RS1281 EP type number : 9 400 083 054

Governor

Governer design. : RSV350...1400A2C2129

: -3R

: 9 420 083 265 Governer no.

Cust. part No. :

Customer-spec. information Customer : MWM : D 229-3 Motor

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0 x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

26.0 Test pressure bar : Tolerance bar : + 1.0

2.25 Prestroke mm : + 0.05Tolerance mm Check tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1- 2- 3 Firing order

Phasing : 0-120-240

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : +- 1.50 Difference ° CS : 4.50

BASIC SETTING

Rated speed rpm : 1400

9.95 Rack travel in mm: Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : + 2.0

Tolerance cm3/1000 strokes : 2.5	RATED SPEED
Check tolerance cm3/1000s. : 4.0	rack travel mm : 8.90 Rated speed rpm : 1445 Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes : 8.0	rack travel mm : 4.00
Tolerance + 1.5 + Check tolerance + + + + + + + + + + + + + + + + + + +	Rated speed rpm : 1510 Tolerance 1/min : +- 15
cm3/1000s. : +- 3.5 +	rack travel mm : 0.85 Tolerance mm : +- 0.55
Tolerance + cm3/1000 strokes : 4.0 + Check tolerance +	Rated speed rpm : 1700
cm3/1000s. : 6.0	LOW IDLE
(D) CETTING OF THEFETTON DIME	
(B) SETTING OF INJECTION PUMP +	control lever
WITH GOVERNOR	position degree : 78.0
+	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 350 rack travel mm : 6.50
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Testing:
dovernon apping	Rated speed rpm : 350
governor spring + + + + + + + + + + + + + + + + + + +	rack travel mm : 7.00
click setting x : 5.50	Tolerance mm : + 0.10
†	need Americal com
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 670
TOLE LOAD DELIVERY AT TOLE LOAD STOP	Tolerance 1/min : + 30
Rated speed rpm : 1400	
Aneroid pressure	Rated speed rpm : 100
hPa : - + Del. quantity +	CRT mm min. : > 19.00
cm3/1000 strokes : 55.0	
cm3/1000 strokes : + 0.5 + Check tolerance	TORQUE CONTROL
cm3/1000s. : + 2.0	Rated speed rpm : 1400 rack travel mm : 9.95
Tolerance	Tolerance mm : +- 0.05
cm3/1000 strokes : 2.5 +	
Check tolerance	Rated speed rpm : 500
cm3/1000s. : 4.0	rack travel mm : 10.75 Tolerance mm : + 0.05
Ţ	10 cor di 100 mm
	Rated speed rpm : 700
CONTROL LEVER	rack travel mm : 10.70 Tolerance mm : + 0.10
control lever	Dated chard now . 1100
position degree : 112.0 + tolerance degree : + 4.0 +	Rated speed rpm : 1100 rack travel mm : 10.35
Total alice degree T.o	- 401 CT GT C HAIT - 10-55

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Tolerance mm	: ← 0.15	
FUEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure		
hPa Rated speed rpm	500	
Del. quantity cm3/1000 strokes	: 49.5	
Tolerance		
cm3/1000 strokes Check tolerance	: +- 1.5	
cm3/1000s.	: +- 3.0	
Aneroid pressure	• _	
Rated speed rpm	700	
Del. quantity cm3/1000 strokes	: 52.0	
Tolerance cm3/1000 strokes	: <del>-</del> 1.5	
Check tolerance cm3/1000s.	: + 3.0	
	. +- 5.0	
Aneroid pressure hPa	: -	
Rated speed rpm Del. quantity	: 1100	
cm3/1000 strokes	: 56.0	
Tolerance cm3/1000 strokes	: +- 1.5	
Check tolerance cm3/1000s.	: <del>+</del> 3.0	
BREAKAWAY		
Rack travel in mm	: 8.90	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1445	
ioterance i/min	, ,	
STARTING FUEL DELIVERY		
Rated speed rpm	: 100	
rack travel mm Tolerance mm	: 20.00 : + 1.00	
LOW IDLE		

Del. quantity		
cm3/1000 strokes	:	8.0
Tolerance		
cm3/1000 strokes	: +-	1.5
Check tolerance		
cm3/1000s.	: +-	3.5
Spreed		
Tolerance		
cm3/1000 strokes	:	4.0
Check tolerance		
cm3/1000s.	:	6.0

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 240

Injection pump

Pump designation : PES4A90D320RS2702 EP type number : 9 400 083 095

Governor

Governer design. : RSV350...1150A2C2129

: -4R

Governer no. : 9 420 083 268

Cust. part No. :

Customer—spec. information Customer : MWM Motor : D 229-4 Power KW : 75.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.70
Tolerance mm : +- 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 9.05
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 64.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Tolerance		
7 ( 3 ) P*) 'AIT ( ( P*)	1	
cm3/1000 strokes	. 70	control lever
CHOTTOUG SETURES	; 3.0	
		position degree : 99.0
Check tolerance	+	tolerance degree : +- 4.0
cm3/1000s.	: 7.0	
COCOT (CIII)	· '.0 T	DATE: 0000
	+	RATED SPEED
Del. quantity	+	
cm3/1000 strokes	. 120	rack travel mm : 8.00
Tolerance	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	†	
cm3/1000 strokes	; <del></del>	Tolerance 1/min : + 5
Check tolerance	+	
cm3/1000s.	: +- 4.0	rack travel mm : 4.00
	7	Dated aread non- 1 40/F
Spreed	<b>†</b>	Rated speed rpm : 1245
Tolerance	+	Tolerance 1/min : +- 15
cm3/1000 strokes	: 4.5	
Check tolerance		rack travel mm : 0.85
	T	
cm3/1000s.	: 7.0 +	Tolerance mm : +- 0.55
	+	Rated speed rpm : 1400
	1	• • • • • • • • • • • • • • • • • • • •
(D) SETTING OF THE	TIECTION DUMP	
(B) SETTING OF IN	DECITON LOWS +	
WITH GOVERNOR	+	
	1	LOW IDLE
	<b>1</b> .	
	T	
GUIDE SLEEVE POSI	TION +	control lever
	1	position degree : 74.0
Rated speed rpm	. 200	tolerance degree : + 4.0
water speed this	. 000	toterance degree . 1- 4.0
	<u> </u>	
Rack travel in mm		control lever
Tolerance mm	: +- 0.35 +	position degree : 24.0
	1	tolerance degree : +- 4.0
	Ţ	toter drive degree 4.0
governor spring	Ť	
pre-tension	+	Setting point w/out bumper spring
click setting x	: 4.75 <del> </del>	
	1	Rated speed rpm : 350
·		rack travel mm : 5.20
	T	rack travet mm . J.20
FULL LOAD DELIVER	Y AT FULL LOAD STOP	
	+	Testing:
Rated speed rpm	: 1150	-
Approved appropriate		Rated speed rpm : 350
Aneroid pressure	Ţ. Ť	
hPa	: - +	manul. Amazza   m
	·	rack travel mm : 5.70
Del. quantity	1	rack travel mm : 5.70 Tolerance mm : + 0.10
Del. quantity cm3/1000 strokes	: 64.0	
cm3/1000 strokes	: 64.0	Tolerance mm : +- 0.10
cm3/1000 strokes Tolerance	7	Tolerance mm : + 0.10 rack travel mm : 2.00
cm3/1000 strokes Tolerance cm3/1000 strokes	7	Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 590
cm3/1000 strokes Tolerance	7	Tolerance mm : + 0.10 rack travel mm : 2.00
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: + 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 590
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	7	Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 590  Tolerance 1/min : + 30
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: + 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 590
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: +- 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: +- 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00  Rated speed rpm : 590  Tolerance 1/min : + 30
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: +- 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: +- 0.5	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 9.05
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 0.5 : +- 2.5 : 3.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 9.05 Tolerance mm : + 0.05
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  CONTROL LEVER control lever	: +- 0.5 : +- 2.5 : 3.0 : 7.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 9.05 Tolerance mm : + 0.05
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  CONTROL LEVER control lever position degree	: + 0.5 : + 2.5 : 3.0 : 7.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 9.05 Tolerance mm : + 0.05  Rated speed rpm : 500
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  CONTROL LEVER control lever	: + 0.5 : + 2.5 : 3.0 : 7.0	Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 590 Tolerance 1/min : + 30  Rated speed rpm : 100  CRT mm min. : > 19.00  TORQUE CONTROL  Rated speed rpm : 1150 rack travel mm : 9.05 Tolerance mm : + 0.05

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Tolerance mm Rated speed rpm	: +- 0.05 : 800		
rack travel mm Tolerance mm	: 9.80 : +- 0.10		
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 9.25 : +- 0.15		
FUEL DELIVERY CHA	RACTERISTICS		
Aneroid pressure			
hPa Rated speed rpm Del. quantity	: - : 500		
cm3/1000 strokes Tolerance	: 62.0		
cm3/1000 strokes	: + 1.5		
Check tolerance cm3/1000s.	: +- 3.5		
Aneroid pressure hPa Rated speed rpm	: - : 800		
Del. quantity cm3/1000 strokes	: 67.0		
Tolerance cm3/1000 strokes Check tolerance	: +- 1.5		
cm3/1000s.	: <del>+-</del> 3.5		
BREAKAWAY			
Rack travel in mm Rated speed rpm Tolerance 1/min	: 8.00 : 1195 : + 5		
STARTING FUEL DELIVERY			
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.00 : ← 1.00		
LOW IDLE			
Del. quantity cm3/1000 strokes	: 12.0		

Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 4.5 Check tolerance cm3/1000s. : 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 241

Injection pump

Pump designation : PES3A90D32ORS2703 EP type number : 9 400 083 096

Governor

Governer design. : RSV350...1150A2C2129

: -4R

Governer no. : 9 420 083 268

Cust. part No. :

Customer-spec. information Customer : MWM Motor : D 229-3

Power KW : 42.7

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.70
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1- 2- 3

Phasing : 0-120-240

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

#### BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 8.55
Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 58.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 2.5

Tolerance -	+
cm3/1000 strokes : 3.0	RATED SPEED
	<del>†</del>
Check tolerance -	rack travel mm : 7.50
cm3/1000s. : 5.0 -	Rated speed rpm : 1195
No.1 minut 24.	Tolerance 1/min : + 5
Del. quantity	
cm3/1000 strokes : 13.0 -	rack travel mm : 4.00 Rated speed rpm : 1235
Tolerance - cm3/1000 strokes : +- 2.0 -	+ Rated speed rpm : 1235 + Tolerance 1/min : +- 15
Check tolerance	L toterance trimin . The 15
cn3/1000s. : +- 4.0 -	rack travel mm : 0.85
Spreed -	Tolerance mm : +- 0.55
Tolerance -	Rated speed rpm : 1400
cm3/1000 strokes : 2.5 -	<u>'</u> '
Check tolerance -	}
cm3/1000s. : 4.5	
-	LOW IDLE
	t
(B) SETTING OF INJECTION PUMP	t
WITH GOVERNOR	control lever
	position degree : 72.0
<b>_</b>	tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
GOIDE SEEEVE POSITION	L secting point wroat bumper spiring
Rated speed rpm : 800	Rated speed rpm : 350
	rack travel mm : 5.10
Rack travel in mm: 0.65	
Tolerance mm : + 0.35	Testing:
	-
governor spring	- Rated speed rpm : 350
pre-tension -	rack travel mm : 5.60
click setting x : 4.25	Tolerance mm : + 0.10
	rack travel mm : 2.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 580
POLE LOAD DELIVERY AT FULL LOAD STOP	Tolerance 1/min : +- 30
Rated speed rpm : 1150	L Toterance Minni . T 50
Aneroid pressure	- Rated speed rpm : 100
hPa : -	- 100
Del. quantity	- CRT mm min. : > 19.00
cm3/1000 strokes : 58.5	•
Tolerance	
cm3/1000 strokes : +- 0.5	- TORQUE CONTROL
Check tolerance	
cm3/1000s. : +- 2.5	- Rated speed rpm : 1150
Spreed	rack travel mm : 8.55
Tolerance	- Tolerance mm : +- 0.05
cm3/1000 strokes : 3.0	- - Rated speed rpm : 500
Check tolerance tom3/1000s. : 5.0	- Rated speed rpm : 500 - rack travel mm : 9.45
- CIIIO/ 10000	- rack travet mm : 9.45 - Tolerance mm : +- 0.05
	TO COT GITTER RING TO TO U.U.J
	- Rated speed rpm : 800
CONTROL LEVER	- rack travel mm : 9.00
1	- Tolerance mm : + 0.10
control lever	-
position degree : 97.0	-
tolerance degree : +- 4.0	-
·	

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.5

Aneroid pressure

hPa : -Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 61.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : +- 3.5

#### **BREAKAWAY**

Rack travel in mm: 7.50
Rated speed rpm: 1195
Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

# LOW IDLE

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 261

Injection pump

Pump designation : PES6A80D320RS1271 EP type number : 9 400 083 058

Governor

Governer design. : RSV350...1250A0C2029

: -3R

Governer no. : 9 420 083 271

Cust. part No. :

Customer-spec. information Customer : MWM Motor : D 229-6

10tor . D 227-0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.25
Tolerance mm : + 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 4.50

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 8.25
Tolerance mm: +- 0.05

Del. quantity cm3/1000 strokes : 50.0

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 2.0

	+
Spreed	+ control lever
Tolerance	position degree : 106.0
cm3/1000 strokes : 2.5	+ tolerance degree : +- 4.0
	+
Check tolerance	+ RATED SPEED
cm3/1000s. : 4.0	+
	+ rack travel mm : 7.20
Del. quantity	Rated speed rpm : 1295
cm3/1000 strokes : 8.0	+ Tolerance 1/min : +- 5
Tolerance	+
cm3/1000 strokes : +- 1.5	rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1335
cm3/1000s. : + 3.5	+ Tolerance 1/min : +- 15
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 4.0	+ Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1450
cm3/1000s. : 6.0	+
	+
(B) SETTING OF INJECTION PUMP	+ LOW IDLE
WITH GOVERNOR	+
	+
	+ control lever
	+ position degree : 79.0
GUIDE SLEEVE POSITION	+ tolerance degree : +- 4.0
	†
Rated speed rpm : 800	+ Setting point w/out bumper spring
	<b>†</b>
Rack travel in mm: 0.65	+ Rated speed rpm : 350
Tolerance mm : + 0.35	rack travel mm : 5.50
	Tooking
governor spring	† Testing:
pre-tension click setting x : 4.25	T Rated speed rpm : 350
click setting $x$ : 4.25	+ Rated speed rpm : 350 + rack travel mm : 6.00
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STO	
FOLL EURO DELIVERI AT FOLL LOAD STO	rack travel mm : 2.00
Rated speed rpm : 1250	Rated speed rpm : 510
Aneroid pressure	Tolerance 1/min : +- 30
hPa : -	+ Total and Truster . 1
Del. quantity	Rated speed rpm : 100
cm3/1000 strokes : 50.0	
Tolerance	+ CRT mm min. : > 19.00
cm3/1000 strokes : +- 0.5	+
Check tolerance	ļ <del></del>
cm3/1000s. : +- 2.0	TORQUE CONTROL
Spreed	1
Tolerance	A Rated speed rpm : 1250
cm3/1000 strokes : 2.5	rack travel mm : 8.25
Check tolerance	† Tolerance mm : + 0.05
cm3/1000s. : 4.0	+
	† Rated speed rpm : 500
	rack travel mm : 9.85
	Tolerance mm : + 0.05
CONTROL LEVER	†
	Rated speed rpm : 800
	+ rack travel mm : 9.25

Tolerance mm	: +- 0.15	
FUEL DELIVERY CHA	NRACTERISTICS	
Aneroid pressure hPa Rated speed rpm Del. quantity	: - : 500	
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 51.5 : +- 1.5	
cm3/1000s.  Aneroid pressure	: +- 3.0	
hPa Rated speed rpm Del. quantity	: 800	
cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 52.0 : +- 1.5	
cm3/1000s.	: +- 3.0	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1295	
STARTING FUEL DELIVERY		
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.00 : + 1.00	
LOW IDLE		
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 8.0 : + 1.5	
Check tolerance cm3/1000s. Spreed	: +- 3.5	

4.0

6.0

End of test specification sheet

Spreed Tolerance

cm3/1000 strokes :

Check tolerance cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 22.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 268

Injection pump

Pump designation : PES4A90D320RS2702 EP type number : 9 400 083 095

Governor

Governer design. : RSV350...1150A2c2129

: -7R

: 9 420 083 273 Governer no.

Cust. part No.

Customer-spec. information : MWM Customer

: TD 229 EC-4 Motor

Power KW 66.2

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar : **←** 1.5 Toterance bar

Test lines : 1 680 750 003

Outside diameter : 6.0 x inside diameter: 2.0 x length mm

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.70 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-3-4-2 Firing order

: 0-90-180-270 Phasing

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : + 1.50Difference ° CS 3.50

BASIC SETTING

Rated speed rpm 1150

10.35 Rack travel in mm : Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

2.5 cm3/1000s.

Tolerance	+
cm3/1000 strokes : 3.0	RATED SPEED
Check tolerance cm3/1000s. : 7.0	rack travel mm : 9.30 Rated speed rpm : 1195
	Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 13.0	Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1255 Tolerance 1/min : + 15  rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1400
Tolerance	Rated speed rpm : 1255
cm3/1000 strokes : +- 2.0 Check tolerance	Tolerance 1/min : +- 15
cm3/1000s. : +- 4.0	rack travel mm : 0.85
Spreed Tolerance	Tolerance mm : +- 0.55 + Rated speed rpm : 1400
cm3/1000 strokes : 4.5	+
Check tolerance cm3/1000s. : 7.0	
	LOW IDLE
(B) SETTING OF INJECTION PUMP	<del>†</del>
WITH GOVERNOR	+ control lever + position degree : 72.0
	tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
Rated speed rpm : 800	+ Rated speed rpm : 350
•	rack travel mm : 5.10
Rack travel in mm : 0.65 Tolerance mm : +- 0.35	Testing:
governor spring	Rated speed rpm : 350
pre-tension click setting x : 4.30	rack travel mm : 5.60 Tolerance mm : + 0.10
Total Societies A. C. Trop	+
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 580
	Tolerance 1/min : +- 30
Rated speed rpm : 1150 - Aneroid pressure -	+ Rated speed rpm : 100
hPa : -	+
Del. quantity - 78.0 - 78.0	- CRT mm min. : > 19.00
Tolerance - cm3/1000 strokes : +- 0.5	TORQUE CONTROL
Check tolerance -	}
cm3/1000s. : +- 2.5 Spreed	Rated speed rpm : 1150 rack travel mm : 10.35
Tolerance -	Tolerance mm : +- 0.05
cm3/1000 strokes : 3.0 - Check tolerance -	Rated speed rpm : 500
cm3/1000s. : 7.0	rack travel mm : 10.85
<u>-</u>	Tolerance mm : +- 0.05
	Rated speed rpm : 700
CONTROL LEVER -	rack travel mm : 10.60 Tolerance mm : +- 0.10
control lever	
position degree : 97.0 - tolerance degree : + 4.0 -	
The second section of the second seco	ī

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500

Del. quantity cm3/1000 strokes : 71.0

Tolerance

cm3/1000 strokes : + 1.5 Check tolerance

cm3/1000s. : + 3.5

Aneroid pressure

hPa : Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 72.5

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : + 3.5

## BREAKAWAY

Rack travel in mm: 9.30
Rated speed rpm: 1195
Tolerance 1/min: + 5

#### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

## LOW IDLE

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : + 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

cm3/1000s. : 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 272

Injection pump

Pump designation : PES4A90D32ORS2744 EP type number : 9 400 084 012

Governor

Governer design. : RSV350...1300A2C2215

: -2R

Governer no. : 9 420 083 275

Cust. part No. :

Customer—spec. information Customer : MWM

Motor : TD 229-4

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.75
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

#### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 10.65 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 89.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : + 2.5

Tolerance cm3/1000 strokes	: 3.0	- RATED SPEED
Check tolerance cm3/1000s.	: 5.0	- rack travel mm : 9.60 - Rated speed rpm : 1345 - Tolerance 1/min : +- 5
Del. quantity cm3/1000 strokes Tolerance	+	- - rack travel mm : 4.00 - Rated speed rpm : 1425
cm3/1000 strokes Check tolerance	: + 2.0	- Tolerance 1/min : +- 15 -
cm3/1000s. Spreed Tolerance	: +- 4.0	- rack travel mm : 0.85 - Tolerance mm : + 0.55 - Rated speed rpm : 1600
cm3/1000 strokes		-
Check tolerance cm3/1000s.		- LOW IDLE
(B) SETTING OF IN	JECTION PIMP	- -
WITH GOVERNOR		control lever position degree : 78.0 tolerance degree : + 4.0
GUIDE SLEEVE POST	TION	Setting point w/out bumper spring
Rated speed rpm	: 800	Rated speed rpm : 350 rack travel mm : 4.50
Rack travel in mm Tolerance mm		Testing:
governor spring	Ţ	Rated speed rpm : 350
pre-tension click setting x	: 5.75	rack travel mm : 5.00 Tolerance mm : +- 0.10
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 570 Tolerance 1/min : + 30
Rated speed rpm Aneroid pressure	: 1300	Rated speed rpm : 100
hPa Del. quantity cm3/1000 strokes	: 89.5	CRT mm min. : > 19.00
Tolerance cm3/1000 strokes	: + 0.5	TORQUE CONTROL
Check tolerance cm3/1000S. Spreed Tolerance	: + 2.5	Rated speed rpm : 1300 rack travel mm : 10.65 Tolerance mm : + 0.05
cm3/1000 strokes	: 3.0	
Check tolerance cm3/1000s.	: 5.0	Rated speed rpm : 500 rack travel mm : 11.25 Tolerance mm : +- 0.05
CONTROL LEVER		Rated speed rpm : 800 rack travel mm : 11.05 Tolerance mm : + 0.15
control lever position degree tolerance degree	: 109.0 : + 4.0	Rated speed rpm : 900 rack travel mm : 10.85

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

Del. quantity cm3/1000 strokes : 88.0

Tolerance

cm3/1000 strokes : +- 1.0 Check tolerance

Check tolerance

cm3/1000s. : +- 3.5

Aneroid pressure

hPa : -Rated speed rpm : 900

Del. quantity

cm3/1000 strokes : 90.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s. : + 3.5

## BREAKAWAY

Rack travel in mm : 9.60
Rated speed rpm : 1345
Tolerance 1/min : + 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

## LOW IDLE

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 313

Injection pump

Pump designation : PES4A90D320RS2744 EP type number : 9 400 084 012

Governor

Governer design. : RSV350...1150A2C2129

: -8R

Governer no. : 9 420 083 277

Cust. part No. :

Gustomer-spec. information Customer : MWM

Motor : TD 229 EC-4

Power KW : 73.6

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C :

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.75
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 10.55
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 87.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.5

Talanana	1
Tolerance : 3.0	T RATED SPEED
empy 1000 strokes . S.O	T MILD SPEED
Check tolerance	rack travel mm : 9.50
cm3/1000s. : 7.0	Rated speed rpm : 1195
	Tolerance 1/min : + 5
Del. quantity	<del>}</del>
cm3/1000 strokes : 13.0	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1275
cm3/1000 strokes : + 2.0	Tolerance 1/min : +- 15
Check tolerance	†
cm3/1000s. : +- 4.0	rack travel mm : 0.85
Spreed -	+ Tolerance mm : +- 0.55 + Rated speed rpm : 1450
Tolerance - cm3/1000 strokes : 4.5	Rated speed rpm : 1450
Check tolerance	
cm3/1000s. : 7.0	
-	LOW IDLE
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	control lever
•	position degree : 77.0
•	tolerance degree : + 4.0
CUTAE OF CELLE DOCUTION	
GUIDE SLEEVE POSITION -	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 350
Nated opeca (pin -	rack travel mm : 4.90
Rack travel in mm: 0.65	1
Tolerance mm : + 0.35	Testing:
-	+
governor spring -	Rated speed rpm : 350
pre-tension	rack travel mm : 5.40 Tolerance mm : + 0.10
click setting x : 5.50	Tolerance mm : + 0.10
<del>-</del>	made though mm. A 2.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 585
FULL EUAD DELIVERY AT FULL EUAD STOP	Tolerance 1/min : +- 30
Rated speed rpm : 1150	L Toterance minni
Aneroid pressure -	Rated speed rpm : 100
hPa : -	1/4004 00004 1 0111
Del. quantity	CRT mm min. : > 19.00
cm3/1000 strokes : 87.0	
Tolerance	
cm3/1000 strokes : +- 0.5	TORQUE CONTROL
Check tolerance	
cm3/1000s. : +- 2.5	Rated speed rpm : 1150
Spreed	rack travel mm : 10.55
Tolerance = 3.0	Tolerance mm : +- 0.05
cm3/1000 strokes : 3.0 - Check tolerance	Rated speed rpm : 500
cm3/1000s. : 7.0	r rack travel mm : 10.85
, , , , , , , , , , , , , , , , , , ,	Tolerance mm : + 0.05
4	-
	Rated speed rpm : 800
CONTROL LEVER	rack travel mm : 10.85
	Tolerance mm : +- 0.05
control lever	
position degree : 103.0	Rated speed rpm : 960
tolerance degree : +- 4.0	rack travel mm : 10.70

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : Reted speed rpm : 500

Del. quantity

cm3/1000 strokes : 81.5

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 3.5

Aneroid pressure

hPa :

Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 86.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 3.5

BREAKAWAY

Rack travel in mm: 9.50

Rated speed rpm : 1195

Tolerance 1/min : +-

STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 20.00

Tolerance mm : +- 1.00

LOW DLE

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

cm3/1000s. : 7.0

End of test specification sheet

K24

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 23.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 085 314

Injection pump

Pump designation : PES6A90D320RS2718 EP type number : 9 400 084 003

Governor

Governer design. : RSV350...1150A2C2097

: -2R

Governer no. : 9 420 083 276

Cust. part No. :

Customer-spec. information

Customer : MWM

: TD 229 EC-06 Motor

Power KW : 117.8

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 bar

Tolerance bar 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.75 : +- 0.05 Tolerance mm

Check

: + - 0.10tolerance mm

Rack travel in mm: 10.50

Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10.50 travel Tolerance mm : +- 1.50 Difference * CS :

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 11.75 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 91.0

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance

cm3/1000s. 2.5

K25

		1	
Spreed Tolerance cm3/1000 strokes	: 3.0	control lever position degree tolerance degree	
Check tolerance	; 7.0	RATED SPEED	
Del. quantity cm3/1000 strokes		rack travel mm Rated speed rpm Tolerance 1/min	: 1195
Tolerance cm3/1000 strokes	: <del>+-</del> 2.0	rack travel mm	
Check tolerance cm3/1000s. Spreed	: +- 4.0	+ Rated speed rpm + Tolerance 1/min	
Tolerance cm3/1000 strokes	: 4.5	rack travel mm Tolerance mm	: +- 0.55
Check tolerance cm3/1000s.	: 7.0	+ Rated speed rpm	: 1450
(B) SETTING OF IN WITH GOVERNOR	UECTION PUMP	LOW IDLE	
		control lever position degree	: 72.0
GUIDE SLEEVE POSI	TION	tolerance degree	
Rated speed rpm	: 800	Setting point w/o	out bumper spring
Rack travel in mm Tolerance mm		Rated speed rpm rack travel mm	
governor spring pre-tension		Testing:	
click setting x	: 4.00	Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP	+	
Rated speed rpm	: 1150	rack travel mm Rated speed rpm	: 2.00 : 620
Aneroid pressure	: -	Tolerance 1/min	: +- 30
Del. quantity cm3/1000 strokes	: 91.0	Rated speed rpm	: 100
Tolerance cm3/1000 strokes		CRT mm min.	: > 19.00
Check tolerance cm3/1000s.	: +- 2.5	TORQUE CONTROL	
Spreed Tolerance		Rated speed rpm	: 1150
cm3/1000 strokes Check tolerance		rack travel mm Tolerance mm	
cm3/1000s.	: 7.0	Rated speed rpm	: 500
		rack travel mm Tolerance mm	: 12.15 : +- 0.05
CONTROL LEVER		Rated speed rpm	: 800 : 11.95
		1 SOLO GLOVO CHIM	- · · · · · · · · · · · · · · · · · · ·

4.5

7.0

End of test specification sheet

Tolerance

cm3/1000s.

cm3/1000 strokes :

Check tolerance

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 23.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 316

Injection pump

Pump designation : PES6A95D41ORS2795 EP type number : 9 400 084 020

Governor

Governer design. : RQV300...1400AB1065

: -18L

Governer no. : 9 420 080 278

Cust. part No. :

Customer-spec. information : MBB Customer Motor : OM 366 Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 : +- 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm :

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : + 0.05Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

## BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 9.95 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 69.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s.

3.0

Spreed Tolerance

cm3/1000 strokes :

3.5

Check tolerance cm3/1000s.

: 8.0

+	Spreed
Del. quantity	Tolerance
cm3/1000 strokes : 11.0 + Tolerance +	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : +- 2.0	cm3/1000s. : 8.0
Check tolerance	CH27 10000:
cm3/1000s. : +- 4.5	
Spreed +	
Tolerance + cm3/1000 strokes : 5.5 +	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0	position degree : 62.0
+	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR	position degree : 110.0
1	tolerance degree : +- 4.0
	-
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 1500	rack travel mm : 8.90
guide sleeve	Rated speed rpm : 1465
travel mm : 8.55 + Tolerance mm : + 0.05 +	Tolerance 1/min : +- 5
Total difference man	rack travel mm : 4.00
Rated speed rpm : 750	Rated speed rpm : 1560
guide sleeve	Tolerance 1/min : + 15
travel mm : 4.20 + Tolerance mm : + 0.10 +	rack travel mm : 0.50
Tolerance mm : +- 0.10	Tolerance mm : +- 0.50
Rated speed rpm : 300	Rated speed rpm : 1680
guide sleeve	·
travel mm : 1.05	
Tolerance mm : + 0.25	LOW IDLE
Rated speed rpm : 500	
guide sleeve	
travel mm : 2.55	control lever
Tolerance mm : + 0.25	position degree : 70.0 tolerance degree : +- 4.0
	toterance degree 4.0
GUIDE SLEEVE POSITION	control lever
<b>1700</b>	position degree : 21.0
Rated speed rpm : 1500	tolerance degree : +- 4.0
Rack travel in mm: 16.50	Testing:
Tolerance mm : +- 1.30 +	•
+	Rated speed rpm : 300
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 7.90 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Toterance min . +- 0.10
Rated speed rpm : 1400	Rated speed rpm : 100
Aneroid pressure +	
hPa : -	CRT mm min. :> 8.00
Del. quantity + cm3/1000 strokes : 69.5 +	Rated speed rpm : 555
Tolerance +	
cm3/1000 strokes : +- 1.0	
Check tolerance	TORQUE CONTROL
cm3/1000s. : +- 3.0 +	

rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 250
Check speed 1/min Check	: > 80 : < 270
speed 1/min	: < 210
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 51.5
BREAKAWAY	
Rack travel in mm Rated speed rpm Tolerance 1/min	: 1465
STARTING FUEL DELI	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 14.10 : +- 0.10 : 84.0

Del. quantity		
cm3/1000 strokes	:	11.0
Tolerance		,
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000s.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	5.5
Check tolerance		
cm3/1000s.	:	9.0

End of test specification sheet

LOW IDLE

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 23.04.96 Edition Test oil : ISO 4113 Combination No. : 9 400 085 333 Injection pump Pump designation : PES4A95D410RS2805 EP type number : 9 400 084 026 Governor Governer design. : RQV300...1400AB1065 : -21L : 9 420 080 303 Governer no. Cust. part No. Customer—spec. information : MBB Customer : OM 364 Motor Power KW 66.0 TEST BENCH REQUIREMENTS Inlet line : 3.1 Test oil inlet temp. °C 40 Tolerance °C 2.0 Overflow valve : 1 419 992 198 1.5 Inlet press. bar : Test nozzle holde assembly : 0 681 343 009

: 173.5 : +- 1.5

: 1 680 750 015

6.0

REMARKS	
(A) INJECTION PUM Set equal deliver per values	
BEGINNING OF DELI	VERY
Test pressure bar Tolerance bar	: 26.0 : +- 1.0
Prestroke mm Tolerance mm Check	: 3.25 : +- 0.05
tolerance mm	: +- 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-3-4-2
Phasing	: 0-90-180-270
BASIC SETTING	<del></del>
Rated speed rpm	: 1400
Rack travel in mm Tolerance mm	: 9.75 : +- 0.05
Del. quantity cm3/1000 strokes	: 69.0
Folerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed Tolerance cm3/1000 strokes	: 3.5
Check tolerance	: 8.0

x inside diameter:

x length mm

3.0

600

bar

Opening pressure

Tolerance bar

Outside diameter :

Test lines

Del. quantity	ł.	Tolerance	
	.o I	cm3/1000 strokes	: 3.5
Tolerance	1	Check tolerance	
	+	cm3/1000s.	: 8.0
Check tolerance			
cm3/1000s. : +- 4 Spreed	.5		
Tolerance	Ţ	CONTROL LEVER	
	.5		
Check tolerance	_ +	control lever	40.0
cm3/1000s. : 9	.0	position degree tolerance degree	
	I	cocerance degree	4.0
(B) SETTING OF INJECTION P	UMP +	control lever	
WITH GOVERNOR	+	position degree	
		tolerance degree	: +- 4.0
GUIDE SLEEVE TRAVEL	<u> </u>	RATED SPEED	
Rated speed rpm : 1500	†	nack though mm	: 8.70
Rated speed rpm : 1500 guide sleeve	I	rack travel mm Rated speed rpm	
travel mm : 8.	55	Tolerance 1/min	
Tolerance mm : +- 0.	<b>0</b> 5 <del> </del>		
Peter and many in 750	t	rack travel mm	
Rated speed rpm : 750 guide sleeve	Ī	Rated speed rpm Tolerance 1/min	
travel mm : 4.	20 +	rocerance mann	
Tolerance mm : + 0.	10 +	rack travel mm	: 0.50
B-+	+	Tolerance mm	: +- 0.50
Rated speed rpm : 300 guide sleeve	Ī	Rated speed rpm	: 1680
travel mm : 1.1	05		
Tolerance mm : + 0.2			
Saturday and sure	†	LOW IDLE	
Rated speed rpm : 500 guide sleeve	Í		
travel mm : 2.	55	control lever	
Tolerance mm : + 0.	25	position degree	
	+	tolerance degree	: <del>+</del> 4.0
GUIDE SLEEVE POSITION		control lever	
00102 022242 . 002120	+	position degree	: 20.0
Rated speed rpm : 1500	+	tolerance degree	: +- 4.0
Rack travel in mm : 16.5	5n I	Testing:	
Tolerance mm : + 1.3		restring.	
	+	Rated speed rpm	
	+	rack travel mm	
FULL LOAD DELIVERY AT FULL	LOAD STOP	Tolerance mm	: +- 0.10
Rated speed rpm : 1400	+	Rated speed rpm	: 100
Aneroid pressure	+	COT2-	. > 7.50
hPa : - Del. quantity	İ	CRT mm min.	: > 7.50
cm3/1000 strokes : 69.	٠.0	Rated speed rpm	: 555
Tolerance	+	, ,	
cm3/1000 strokes : +- 1.	.0 +	TODOLE CONTROL	
Check tolerance cm3/1000s. : +- 3.	n İ	TORQUE CONTROL	
Spreed	<u> </u>	Rated speed rpm	: 1400
•	•	•	

Tolerance mm Rated speed rpm	: +- 0.05 : 700
rack travel mm	: 9.75
Tolerance man	: + 0.05
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 100 : < 250
Check speed 1/min	; > 80
Check	. > 00
speed 1/min	: < 270
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa	
hPa Rated speed rpm	700
vec. quantity	
cm3/1000 strokes Tolerance	: 56.5
cm3/1000 strokes	: ← 2.0
Check tolerance cm3/1000s.	: +- 4.0
BREAKAWAY	
Rack travel in mm	: 8.70
Rated speed rpm	: 1465
Tolerance 1/min	: +- 5
STARTING FUEL DELI	VERY
Rated speed rpm	: 100
rack travel mm Tolerance mm	: 13.90 : +- 0.10
Del. quantity	0.10
cm3/1000 strokes	: 84.0
Tolerance cm3/1000 strokes	: +- 7.5
Check tolerance	
cm3/1000s.	: +- 10.0

Del. quantity		
cm3/1000 strokes	:	8.0
Tolerance		
cm3/1000 strokes	: +-	2.0
Check tolerance		
cm3/1000S.	: +-	4.5
Spreed		
Tolerance		
cm3/1000 strokes	2	5.5
Check tolerance		
cm3/1000s.	•	9.0
	•	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 337

Injection pump

Pump designation : PES6A95D41ORS2812 EP type number : 9 400 084 028

Governor

Governer design. : RQV350...1300AB1260L

Governer no. : 9 420 080 306

Cust. part No. : 9.0520.05.6.9501

Customer-spec. information

Customer : MWM

Motor : TD 610 / X-10

Power KW : 143.9

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

#### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 12.05 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 94.5

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

	<del></del>		
Spreed Tolerance cm3/1000 strokes	: 3.5	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1300	
Check tolerance cm3/1000s.	: 8.0	Aneroid pressure hPa : 800 Del. quantity	
Del. quantity cm3/1000 strokes : Tolerance	: 10.5	cm3/1000 strokes : 94.5 Tolerance cm3/1000 strokes : + 1.0	
cm3/1000 strokes : Check tolerance	: +- 2.0	Check tolerance cm3/1000s. : +- 3.0	
cm3/1000s.	: +- 4.5	Spreed Tolerance	
Tolerance cm3/1000 strokes	: 5.5	cm3/1000 strokes : 3.5 Check tolerance	
Check tolerance cm3/1000s.	: 9.0	cm3/1000s. : 8.0	
(B) SETTING OF INJE	ECTION PUMP	CONTROL LEVER	_
WITH GOVERNOR		control lever position degree : 56.0	
GUIDE SLEEVE TRAVEL	+	tolerance degree : +- 4.0	
Rated speed rpm : guide sleeve	+	control lever position degree : 111.0	
	: 7.20 : + 0.10	tolerance degree : +- 4.0  RATED SPEED	
Rated speed rpm : guide sleeve	: 800	rack travel mm : 11.00	
travel mm :	3.95 + 0.25	Rated speed rpm : 1345 Tolerance 1/min : +- 5	
	300	rack travel mm : 4.00	
guide sleeve travel mm :	1.05	Rated speed rpm : 1505 Tolerance 1/min : + 15	
	550	rack travel mm : 0.50 Tolerance mm : +- 0.50	
guide steeve travel mm	2.75	Rated speed rpm : 1650	
	+ 0.25		
guide sleeve	1500	LOW IDLE	
travel mm : Tolerance mm :	8.55 + 0.25	control lever	
GUIDE SLEEVE POSITI	ONI	position degree : 67.0 tolerance degree : +- 4.0	
Rated speed rpm :	+	control lever position degree : 12.0	
Rack travel in mm :	+	tolerance degree : +- 4.0	
Tolerance mm :		Testing:	
	•		

Rated speed rpm rack travel mm	: 5.50	+ Rated speed rpm : < 270
Tolerance mm	: +- 0.10	+ Check + speed 1/min : > 80
Rated speed rpm	: 100	+ Check
CRT mm min.	; > 6.50	+ speed 1/min : < 290
Rated speed rpm	: 425	FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL		Aneroid pressure : 800
Data dana dana	: 1300	Rated speed rpm : 800
Rated speed rpm rack travel mm Tolerance mm	: 12.05	Del. quantity cm3/1000 strokes : 95.5
Tolerance mm	: +- 0.05	+ Tolerance + cm3/1000 strokes : +- 2.0
Rated speed rpm	: 800 12.35	Check tolerance
rack travel mm Tolerance mm	: 12.35 : + 0.05	+ cm3/1000s. : +- 4.0
Dated aread arm	: 850	Aneroid pressure  hPa : -  Rated speed rpm : 500  Del. quantity  cm3/1000 strokes : 59.5  Tolerance  cm3/1000 strokes : + 1.0
Rated speed rpm rack travel mm Tolerance mm	12.35	Rated speed rpm : 500
Tolerance mm	: <del>+-</del> 0.05	+ Del. quantity + cm3/1000 strokes : 59.5
Rated speed rpm	: 1150	Tolerance
rack travel mm	: 12.05	cm3/1000 strokes : + 1.0
Tolerance mm	: + 0.05	+ Check tolerance + cm3/1000s. : +- 3.0
		+
ANEROID/ALTITUDE COMPENSATOR TEST		BREAKAWAY
SETTING		Rack travel in mm : 11.00
Rated speed rpm	: 500	+ Rated speed rpm : 1345 + Tolerance 1/min : + 5
Pressure hPa	: 800	+
rack travel mm Tolerance mm	: 12.35 : +- 0.05	<u> </u>
		STARTING FUEL DELIVERY
MEASUREMENT		Rated speed rpm : 100
Pressure hPa	- F00	+ rack travel mm : 20.00 + Tolerance mm : + 1.00
Rated speed rpm	: 500	† Toterance mm : + 1.00
Rated speed rpm	: 500	<u> </u>
Pressure hPa	: 190	1011 701 5
rack travel mm Tolerance mm	: 0.45 : +- 0.05	+ LOW IDLE
		Del. quantity
Pressure hPa rack travel mm	: 460 : 1.55	cm3/1000 strokes : 10.5 Tolerance
Tolerance mm	: +- 0.15	- cm3/1000 strokes : +- 2.0
		+ Check tolerance + cm3/1000s. : +- 4.5
START CUT-OUT		Spreed
Rated speed rpm	: > 100	Tolerance cm3/1000 strokes : 5.5

L08

Check tolerance cm3/1000s.	:	9.0	
	***		
			<del></del>

## BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... : 23.04.96 Edition : ISO 4113 Test oil Combination No. : 9 400 085 346 Injection pump Pump designation : PES4A95D410RS2805 EP type number : 9 400 084 026 Governor Governer design. : RSV350...900A7C2O76 : -2L : 9 420 083 253 Governer no. Cust. part No. Customer-spec. information Customer : MBB : OM 364 Motor Power KW : 46.0 TEST BENCH REQUIREMENTS Inlet line : 3.2 Test oil inlet temp. °C 40 2.0 Tolerance °C : 1 419 992 198 Overflow valve Inlet press. bar : 1.5 Test nozzle holde : 0 681 343 009 assembly Opening pressure 173.5 bar : +- 1.5 Tolerance bar

: 1 680 750 015

6.0

x length mm	: 600
REMARKS	
(A) INJECTION PUM Set equal deliver per values	
BEGINNING OF DELI	VERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Check	: 3.25 : + 0.05
	: +- 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 1-3-4-2
Phasing	: 0-90-180-270
BASIC SETTING	
Rated speed rpm	: 860
Rated speed rpm  Rack travel in mm Tolerance mm	: 8.65
Rack travel in mm	: 8.65 : + 0.05
Rack travel in mm Tolerance mm	: 8.65 : + 0.05
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: 8.65 : + 0.05 : 58.5
Rack travel in mm Tolerance mm  Del. quantity cm3/1000 strokes  Tolerance cm3/1000 strokes  Check tolerance cm3/1000s.  Spreed Tolerance	: 8.65 : + 0.05 : 58.5 : +- 1.0
Rack travel in mm Tolerance mm  Del. quantity cm3/1000 strokes  Tolerance cm3/1000 strokes  Check tolerance cm3/1000s.  Spreed Tolerance	: 8.65 : + 0.05 : 58.5 : +- 1.0 : +- 3.0

x inside diameter:

3.0

Test lines

Outside diameter :

Del. quantity		1		
cm3/1000 strokes	: 7.5	Rate	ed speed rpm	: 935
Tolerance		+ Tole	erance 1/min	
cm3/1000 strokes	; <del></del> 2.0	+ rack	c travel mm	: 4.00
Check tolerance		+ .		
cm3/1000s.	: ← 4.5		c travel mm	: 0.85
Spreed Tolerance			erance mm ed speed rpm	: +- 0.55 : 1100
cm3/1000 strokes	: 5.5	I ware	sa speed rpill	. 1100
Check tolerance	. 3.3	Rate	ed speed rpm	: 911
cm3/1000s.	: 9.0		travel mm	
		+		
(m) opposite of the	LEGITON DUMP		ed speed rpm	936
(B) SETTING OF IN WITH GOVERNOR	DECITON DOWN		erance 1/min c travel mm	: +- 4 : 4.00
WITH GOVERNOR		I	. cravet mm	. 4.00
		rack	travel mm	: 0.85
		+ Tole	erance mm	: +- 0.55
GUIDE SLEEVE POSI	TION	+ Rate	ed speed rpm	: 1100
Dottod amaged nam	. Śńo	† Doto	d coood nam	: 912
Rated speed rpm	: 800		ed speed rpm c travel mm	
Rack travel in mm	: 0.50	T den	. Cravec han	. 7.00
Tolerance mm		+ Rate	ed speed rpm	: 937
			erance 1/min	
governor spring		+ rack	travel mm	: 4.00
pre-tension click setting x	: 6.75	T rack	travel mm	: 0.85
ctick secting x	. 0.75		rance mm	: +- 0.55
			ed speed rpm	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	+		
	848		d speed rpm	
Rated speed rpm	: 860	† rack	travel mm	: 7.60
Aneroid pressure hPa	•	I Rate	d speed rpm	: 938
Del. quantity	•		rance 1/min	
cm3/1000 strokes	: 58.5		travel mm	: 4.00
Tolerance		+		
cm3/1000 strokes	: +- 1.0		travel mm	: 0.85
Check tolerance cm3/1000S.	: + 3.0		rance mm d speed rpm	: +- 0.55 : 1100
Spreed	. — 5.0	I	a speed (biii	. 1100
Tolerance		Rate	d speed rpm	: 914 : 7.60
cm3/1000 strokes	: 3.5	+ rack	travel mm	: 7.60
Check tolerance	2.2	+		070
cm3/1000s.	: 8.0		d speed rpm rance 1/min	
			travel mm	
		1 1000	or dvee than	. 7.00
CONTROL LEVER			travel mm	: 0.85
		+ Tole	rance mm	: +- 0.55
control lever	. 112 0	T Rate	d speed rpm	: 1100
position degree tolerance degree	· +- 4.0	I Rate	d speed rpm	: 915
totel alive deglice	,		travel mm	
		+		
ASSEMBLY GOVERNOR	SETTING	+ Rate	d speed rpm	: 940
Datad apacel non-	: 910		rance 1/min travel mm	
Rated speed rpm rack travel mm	: 7.60	I rack	travet mm	. 4.00
I GOT OF GACE HAN		ī		

0.85 rack travel mm Tolerance mm 0.55 1100 Rated speed rpm

LOW IDLE

control lever

82.0 position degree tolerance degree : +-4.0

Setting point w/out bumper spring

350 Rated speed rpm rack travel mm 6.00

Testing:

350 Rated speed rpm rack travel mm 6.50 : +- 0.10 Tolerance mm

2.00 rack travel mm Rated speed rpm 410 Tolerance 1/min 30

Rated speed rpm 100

CRT mm min. : > 19.00

TORQUE CONTROL

Rated speed rpm 860 rack travel mm 8.65 Tolerance mm : +- 0.05

500 Rated speed rpm rack travel mm 8.70 Tolerance mm : + - 0.10

400 Rated speed rpm rack travel mm 9.60 Tolerance mm : +- 0.30

STARTING FUEL DELIVERY

100 Rated speed rpm 13.40 rack travel mm : + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 84.0 Tolerance

7.5 cm3/1000 strokes : +-

Check tolerance

cm3/1000s. : +- 10.0

LOW IDLE

Del. quantity 7.5 cm3/1000 strokes :

Tolerance

cm3/1000 strokes 2.0

Check tolerance

cm3/1000s. 4.5

Spreed Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 23.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 085 348

Injection pump

Pump designation : PES6A95D410RS2812 EP type number : 9 400 084 028

Governor

Governer design. : RSV350...900A7C805L

: 9 420 083 263 Governer no.

Cust. part No. : 9.0520.05.6.9504

Customer-spec. information

: MWM Customer

: 6.10 TCA Motor : 154.5

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40

Tolerance °C 2.0

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0 x inside diameter : 2.0 600 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

2.80 Prestroke mm : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Beginning of delivery differende

and maximum rack

10.50 travel : +- 1.50 Tolerance mm Difference ° CS :

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 13.95

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 137.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 3.0

	ì			
Spreed		control lever		
Tolerance	1	position degree	:	106.0
cm3/1000 strokes : 3.5	1	tolerance degree		4.0
	+	3		
Check tolerance	+			
cm3/1000s. : 8.0	+	ASSEMBLY GOVERNOR	SETT1	ING
	+			
Del. quantity	+	Rated speed rpm	:	900
cm3/1000 strokes : 17.5	+	rack travel mm	:	13.00
Tolerance	†	Da North Common of Common		015
cm3/1000 strokes : +- 2.0	†	Rated speed rpm	:	945
Check tolerance cm3/1000s. : +- 4.5	†	Tolerance 1/min	: +-	4
cm3/1000s. : +- 4.5 Spreed	Ť	rack travel mm	:	4.00
Tolerance	Ī	rack travel mm	•	0.85
cm3/1000 strokes : 5.5	$oxed{f I}$	Tolerance mm	• +	0.55
Check tolerance	I	Rated speed rpm		1100
cm3/1000s. : 9.0	1	nacea speed i piii	•	, , , ,
	1	Rated speed rpm	:	901
	1	rack travel mm		13.00
(B) SETTING OF INJECTION PUMP	, 1		•	
WITH GOVERNOR	1	Rated speed rpm	:	946
	+	Tolerance 1/min	: +-	4
	+	rack travel mm	:	4.00
	<del></del> +			
GUIDE SLEEVE POSITION	+	rack travel mm	:	0.85
	+	Tolerance mm		0.55
Rated speed rpm : 800	†	Rated speed rpm	:	1100
5 ( )	†	Selection and com-		000
Rack travel in mm: 0.65	†	Rated speed rpm	:	902
Tolerance mm : +- 0.35	†	rack travel mm	:	13.00
governor spring	I	Rated speed rpm	•	947
pre-tension	I	Tolerance 1/min	•	4
click setting x : 5.20	1	rack travel mm	•	4.00
orion secting x . size	1	Table of a voc man	•	
		rack travel mm	:	0.85
FULL LOAD DELIVERY AT FULL LO	AD STOP +	Tolerance mm	: +-	0.55
	+	Rated speed rpm	:	1100
Rated speed rpm : 850	+			
Aneroid pressure	+	Rated speed rpm	:	903
hPa : -	+	rack travel mm	:	13.00
Del. quantity	+			040
cm3/1000 strokes : 137.5	†	Rated speed rpm	:	948
Tolerance	†	Tolerance 1/min rack travel mm	: +-	4 4 00
cm3/1000 strokes : +- 1.0 Check tolerance	<b>T</b>	rack travel mm	•	4.00
cm3/1000s. : +- 3.0	I	rack travel mm		0.85
Spreed	I	Tolerance mm	• +-	0.55
Tolerance	1	Rated speed rpm		1100
cm3/1000 strokes : 3.5	1	Marca opeca i piii	•	
Check tolerance	1	Rated speed rpm	:	904
cm3/1000s. : 8.0	1	rack travel mm	•	13.00
	+			<del>-</del>
	+	Rated speed rpm	:	949
	+	Tolerance 1/min	: +-	4
CONTROL LEVER	+	rack travel mm	:	4.00
	+			
	+	rack travel mm	:	0.85

Tolerance mm	: +- 0.55
Rated speed rpm	: 1100
Rated speed rpm	: 905
rack travel mm	: 13.00
Rated speed rpm	: 950
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1100

### LOW IDLE

control lever
position degree : 75.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 5.00

## Testing:

Rated speed rpm : 350 rack travel mm : 5.50 Tolerance mm : +--- 0.10

rack travel mm : 2.00
Rated speed rpm : 395
Tolerance 1/min : + 30

Rated speed rpm : 100

CRT mm min. : > 19.00

### TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 13.95 Tolerance mm : +- 0.05

Rated speed rpm : 550 rack travel mm : 14.00 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 15.50 Tolerance mm : +- 0.30

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

### LOW IDLE

Del. quantity 17.5 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.5 Spreed Tolerance cm3/1000 strokes : 5.5 Check tolerance 9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.04.96 Test oil : ISO 4113

Combination No. : 9 400 085 352

Injection pump

Pump designation : PES6A95D41ORS2795 EP type number : 9 400 084 020

Governor

Governer design. : RSV350...1050A0C1150

: -7L

: 9 420 083 287 Governer no.

Cust. part No. :

Customer-spec. information : MBB Customer : OM 366 Motor : 70.0 Power KW

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

173.5 bar : + 1.5 Tolerance bar

Test Lines : 1 680 750 015

Outside diameter : 6.0 x inside diameter : 3.0 x length mm 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.25 : +- 0.05Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 7.85 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 48.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. 8.0

Del. quantity	
cm3/1000 strokes Tolerance	: 13.0
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: +- 4.5
Spreed	111
Tolerance cm3/1000 strokes	; 5.5
Check tolerance	
cm3/1000s.	: 9.0
(B) SETTING OF IN WITH GOVERNOR	NJECTION PUMP
GUIDE SLEEVE POST	CTION
Rated speed rpm	
Rack travel in mm Tolerance mm	n: 0.65 :+- 0.35
governor spring	
pre-tension click setting x	5.50
_	
FULL LOAD DELIVER	RY AT FULL LOAD STOP
Rated speed rpm	: 1050
Aneroid pressure hPa	•
Del. quantity	•
cm3/1000 strokes Tolerance	: 48.5
cm3/1000 strokes	: <del>+</del> 1.0
Check tolerance cm3/1000s.	: +- 3.0
Spreed	5,0
Tolerance cm3/1000 strokes	: 3.5
Check tolerance	
cm3/1000s.	: 8.0
CONTROL LEVER	
control lever	405.0
position degree tolerance degree	: 105.0 : + 4.0
RATED SPEED	. • -
rack travel mm Rated speed rpm	: 6.80 : 1095
ration openia i pin	. (0/)

Tolerance 1/min	<b>:</b> +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1145 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
LOW IDLE	
control lever position degree tolerance degree	: 85.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm rack travel mm	: 350 : 6.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 7.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 585 : + 30
Rated speed rpm	: 100
CRT man min.	: > 19.00
TORQUE CONTROL	
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 7.85 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 9.25 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 900 : 8.20 : +- 0.10
ELIEL DEL TVEDY CHAE	DACTED TOTACO

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 54.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0 Aneroid pressure hPa Rated speed rpm 900 Del. quantity cm3/1000 strokes : 53.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000S.4.0 BREAKAWAY Rack travel in mm : 6.80 Rated speed rpm : 1095 Tolerance 1/min : +- 5 STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 13.00 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 84.0 Tolerance cm3/1000 strokes : +- 7.5Check tolerance cm3/1000s. : +- 10.0 LOW IDLE Del. quantity cm3/1000 strokes : 13.0 Tolerance 2.0 cm3/1000 strokes : +-Check tolerance 4.5 cm3/1000s. Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance 9.0 cm3/1000s.

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 087 305

Injection pump

Pump designation : PES6P110A720RS3145

: 9 400 087 033 EP type number

Governor

Governer design. : RQV350...1300PA748

Governer no. : 9 420 080 193

Cust. part No. :

Customer-spec. information Customer : FORD Motor : 6,61 TC Power KW : 123.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 017 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm Tolerance mm : 4.30 : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: ~300

Beginning of delivery differende

and maximum rack

travel 10.50 Tolerance mm : + 1.50 Difference ° CS : 3.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.65 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 95.0

Tolerance cm3/1000 strokes : + 1.5

Check tolerance : +- 4.0 cm3/1000s.

	+		
Spreed Tolerance cm3/1000 strokes	: 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP	
Check tolerance		Rated speed rpm : 1300 Aneroid pressure	
cm3/1000s.	: 7.5	hPa : - Del. quantity	
Del. quantity cm3/1000 strokes	: 12.5	cm3/1000 strokes : 95.0 Tolerance	
	: +- 2.5	cm3/1000 strokes : +- 1.5 Check tolerance	
	: +- 5.0	cm3/1000s. : +- 4.0 Spreed	
Spreed Tolerance	‡	Tolerance cm3/1000 strokes : 4.0	
Check tolerance	: 4.5	Check tolerance cm3/1000s. : 7.5	
cm3/1000s.	: 7.5		
(B) SETTING OF INJUNITH GOVERNOR	ECTION PUMP	CONTROL LEVER	
	+	control lever	
GUIDE SLEEVE TRAVE	+	position degree : 64.0 tolerance degree : +- 4.0	
Rated speed rpm	; 1300	RATED SPEED	
travel mm	: 7.25	rack travel mm : 10.60	
	: +- 0.05	Rated speed rpm : 1365 Tolerance 1/min : +- 5	
Rated speed rpm guide sleeve	: 500	rack travel mm : 4.00	
travel mm	: 2.50	Rated speed rpm : 1485	
Tolerance mm	: + 0.20	Tolerance 1/min : +- 15	
Rated speed rpm : guide sleeve	: 1000	rack travel mm : 0.50 Tolerance mm : + 0.50	
travel mm :	5.15	Rated speed rpm : 1600	
	: + 0.15		
guide sleeve	: 800	LOW IDLE	-
travel mm :	4.15		
Tolerance mm	+ 0.15	control lever	
Rated speed rpm :	350	position degree : 16.0	
guide sleeve	<del>-</del>	tolerance degree : +- 4.0	
travel mm :	0.95	Tau 4.5 a.a.	
Tolerance mm :	+ 0.35	Testing:	
CUINE OF CELLE BOOTES	rou	Rated speed rpm : 350	
GUIDE SLEEVE POSITI	LUN	rack travel mm : 7.00 Tolerance mm : +- 0.10	
Rated speed rpm :	1350	rack travel mm : 2.00	
Rack travel in mm :	16.50	Rated speed rpm : 610	
Tolerance mm :		Tolerance 1/min : +- 30	
	†		

Rated speed rpm 100 CRT mm min. : > 10.00 Rated speed rom 405 TORQUE CONTROL Rated speed rpm 1300 rack travel mm 11.65 Tolerance mm : ← 0.05 Rated speed rom 008 rack travel mm : 11.65 : +- 0.05 Tolerance mm START CUT-OUT Rated speed rpm 230 : > Rated speed rpm 290 : < Check speed 1/min : > 210 Check speed 1/min 310 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 800 Rated speed rpm Del. quantity cm3/1000 strokes : 93.5 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 4.0 BREAKAWAY Rack travel in mm : 10.60 Rated speed rpm : Tolerance 1/min STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm 20.50 : **←** 0.50 Tolerance mm Del. quantity 115.0 cm3/1000 strokes :

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 14.0

LOW IDLE

Del. quantity cm3/1000 strokes : 12.5 Tolerance cm3/1000 strokes : +-2.5 Check tolerance cm3/1000s. : +-5.0 Spreed Tolerance 4.5 cm3/1000 strokes : Check tolerance cm3/1000s. 7.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17,04,96 Edition : ISO 4113 Test oil

Combination No. : 9 400 087 308

Injection pump

Pump designation : PE5P110A720RS479 EP type number : 9 400 087 040

Governor

Governer design. : RQ300/1050PA718-1 Governer no. : 9 420 080 187

Cust. part No. : 3450749401

Customer-spec. information

Customer : MBB

: 0M355-5 A Motor Power KW : 170.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 : +- 1.5 bar Tolerance bar

Test Lines : 1 680 750 004

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm Tolerance mm : 3.40 : +- 0.05 Check tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-2-4-5-3

: 0-72-144-216-288 Phasing

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 12.25 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 162.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance cm3/1000s.

: 7.5

Del. quantity		+	Check tolerance	
cm3/1000 strokes	: 13.5		cm3/1000s.	: + 4.0
Tolerance			Spreed	
cm3/1000 strokes	: <del>+-</del> 2.5		Tolerance	
Spreed			cm3/1000 strokes	: 4.0
Tolerance			Check tolerance	
cm3/1000 strokes	: 4.5		cm3/1000s.	: 7.5
Check tolerance	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	011107 1 0 0 0 0 1	
cm3/1000s.	: 7.5	1		
CIIIS7 100001	• 1.5	⊥ .		
		1 1	CONTROL LEVER	
(B) SETTING OF IN	JIECTION PHMP	1	CONTINUE ELVEN	
WITH GOVERNOR	10 20 1 20 1 0 1 1	1 .	control lever	
WITH GOVERNOR			position degree	: 34.0
			tolerance degree	
GUIDE SLEEVE TRAV	/EI	I '	totel alice degree	4.0
GOIDE GEEEVE THAT	, L L	$\perp$	control lever	
Rated speed rpm	: 300		position degree	: 96.0
guide sleeve	. 500		tolerance degree	
travel mm	: 2.40	T '	toterance degree	4.0
		T,	RATED SPEED	
Tolerance mm	: +- 0.20	† '	RAIED SPEED	
Dahad secol sec	: 1100	T.	rack travel mm	: 11.20
Rated speed rpm	: 1100			
guide sleeve			Rated speed rpm	
travel mm	: 6.85	† '	Tolerance 1/min	: +- 8
Tolerance mm	: <del>+-</del> 0.25	†		, <b>3</b> 5
	400		rack travel mm	
Rated speed rpm	: 600		Rated speed rpm	
guide sleeve	4.00	† 1	Tolerance 1/min	: +- 15
travel mm	: 6.00	†		0.50
Tolerance mm	: +- 0.10		rack travel mm	: 0.50
			Tolerance mm	: + 0.50
Rated speed rpm	: 900	+ F	Rated speed rpm	: 1300
guide sleeve		+		
travel mm	: 6.20	+		
Tolerance mm	: <b>←</b> 0.10	+ -		
		+ L	LOW IDLE	
Rated speed rpm	: 1170	+		
guide sleeve		+		
travel mm	: 9.75	+ 0	control lever	
Tolerance mm	: <b>←</b> 0.25	+ F	oosition degree	: 75.0
		+ t	tolerance degree	: +- 4.0
		+		
GUIDE SLEEVE POSI	TION		control lever	
		+ p	position degree	: 13.0
Rated speed rpm	: 600	+ t	tolerance degree	: +- 4.0
•		+	_	
Rack travel in mm	: 20.00	<b>1</b> T	Testing:	
Tolerance mm		1	• • • •	
		1 B	Rated speed rpm	: 300
			rack travel mm	: 6.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP	3.	Tolerance mm	: + 0.10
		7		- · <del></del>
Rated speed rpm	: 1050	1 r	rack travel mm	: 2.00
Aneroid pressure			Rated speed rpm	
hPa	: 700		Tolerance 1/min	
Del. quantity	, 50	<u> </u>	CTOLONIOO ITMIII	
cm3/1000 strokes	: 162.0	1 0	Rated speed rpm	: 100
Tolerance	. 102.0	1 "	weed opeca i pill	
cm3/1000 strokes	· + 10	1 ^	CRT mm min.	: > 8.50
CHIST TOUG SETURES	. ' '	T 0	21X 1 (IA) (II (1) (1)	0.50

		+ Aneroid pressure
TORQUE CONTROL		+ hPa : 700 + Rated speed rpm : 600
Rated speed rpm rack travel mm	: 1050 : 12,25	<pre>- Del. quantity - cm3/1000 strokes : 179.0 - Tolerance</pre>
Tolerance mm	: <b>←</b> 0.05	cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm rack travel mm	: 600 : 13.15	cm3/1000s. : +- 5.0
Tolerance mm	: + 0.05	+ Aneroid pressure + hPa : 700
Rated speed rpm rack travel mm Tolerance mm	: 12.85	Rated speed rpm : 900 Del. quantity cm3/1000 strokes : 176.0
rocerance and		Tolerance + cm3/1000 strokes : + 2.0
ANEROID/ALTITUDE COMPENSATOR TEST		Check tolerance cm3/1000s. : +- 5.0
SETTING		Aneroid pressure hPa : -
Rated speed rpm Pressure hPa	: 500 : 700	+ Rated speed rpm : 500 + Del. quantity + cm3/1000 strokes : 114.0
rack travel mm Tolerance mm	: 13.15 : + 0.05	Tolerance cm3/1000 strokes : +- 1.0
MEASUREMENT		Check tolerance cm3/1000s. : +- 4.0
Pressure hPa Rated speed rpm	: - : 500	BREAKAWAY
rack travel mm Tolerance mm	: 10.35 : + 0.05	Post travel in an an 11 20
Rated speed rpm	: 500	+ Rack travel in mm : 11.20 + Rated speed rpm : 1103 + Tolerance 1/min : +- 8
Pressure hPa rack travel mm	: 250 : 11.20	Total and Thinks
Tolerance mm	: + 0.10	STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 400 : 12.45 : + 0.05	Rated speed rpm : 100 rack travel mm : 13.80 Tolerance mm : + 0.50
START CUT-OUT		Del. quantity cm3/1000 strokes : 160.0 Tolerance
Rated speed rpm Rated speed rpm	: > 110 : < 230	cm3/1000 strokes : +- 10.0
Check speed 1/min	: > 90	
Check speed 1/min	: < 270	LOW IDLE
FUEL DELIVERY CHA	DACTEDICTICS	Del. quantity cm3/1000 strokes : 13.5 Tolerance
FOEL DELIVERY CHA	INVELEUTO LTCO	cm3/1000 strokes : +- 2.5 Spreed

Tolerance cm3/1000 strokes : Check tolerance cm3/1000s. : 4.5

7.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 449

Injection pump

Pump designation : PES6P120A320/3RS3264

EP type number : 9 400 087 075

Governor

Governer design. : RQV350...1100PA973 Governer no. : 9 420 080 293

Cust. part No. : 3354438

Customer—spec. information Customer : CUMMINS

Motor : 6 CTAA - 8.3 L

Power KW : 216.6

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.50
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

## BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.85
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 204.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

m3/1000s. : + 4.0

Spreed

Tolerance

cm3/1000 strokes :

5.0

9.0

Check tolerance

cm3/1000s. :

<u> </u>	Spreed
Del. quantity	Tolerance 5.0
cm3/1000 strokes : 9.5	cm3/1000 strokes : 5.0
Tolerance + 3.0 +	Check tolerance cm3/1000s. : 9.0
Check tolerance	cm3/1000s. : 9.0
check toterance : + 6.0 +	
Spreed	
Tolerance	CONTROL LEVER
cm3/1000 strokes : 8.0	CONTROL ELVER
Check tolerance	control lever
cm3/1000s. : 12.0	position degree : 55.0
+	tolerance degree : +- 4.0
+	-
(B) SETTING OF INJECTION PUMP	control lever
WITH GOVERNOR +	position degree : 111.0
+	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rom : 1150	rack travel mm : 10.80
Rated speed rpm : 1150 +	Rated speed rpm : 1165
travel mm : 7.05	Tolerance 1/min : +- 5
Tolerance mm : +- 0.05	roterance training
Total dilec limit	rack travel mm : 4.00
Rated speed rpm : 1400	Rated speed rpm : 1345
guide sleeve	Tolerance 1/min : +- 15
travel mm : 9.00	
Tolerance mm : +- 0.20 +	rack travel mm : 0.50
1	Tolerance mm : +- 0.50
Rated speed rpm : 350 +	Rated speed rpm : 1500
guide sleeve +	
travel mm : 1.60	
Tolerance mm : + 0.20	LOUITALE
Dated and during a 450	LOW IDLE
Rated speed rpm : 650	
guide sleeve + travel mm : 4.50 +	control lever
Tolerance mm : + 0.20	position degree : 70.0
Toter ance and	tolerance degree : +- 4.0
	toto, and adji to i . Tio
GUIDE SLEEVE POSITION	control lever
<u> </u>	position degree : 15.0
Rated speed rpm : 1325	tolerance degree : +- 4.0
+	
Rack travel in mm: 16.50	Testing:
Tolerance mm : + 1.30 +	750
†	Rated speed rpm : 350
FULL LOAD DELTHEDY AT FULL LOAD STOD	rack travel mm : 6.00
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 1100	Rated speed rpm : 100
Rated speed rpm : 1100 + Aneroid pressure +	nated speed (pill . 100
hPa : 1300 +	CRT mm min. $:>8.00$
hPa : 1300 +	CRT mm min. :> 8.00
Del. quantity	
Del. quantity cm3/1000 strokes : 204.5 Tolerance cm3/1000 strokes : + 1.0	
Del. quantity cm3/1000 strokes : 204.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance	
Del. quantity cm3/1000 strokes : 204.5 Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 500

Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.85	Tolerance cm3/1000 strokes : 6.0
Rated speed rpm		+ Check tolerance cm3/1000s. : 12.0
rack travel mm Tolerance mm	: 11.85 : +- 0.05	Aneroid pressure  hPa : -  Rated speed rpm : 500
ANEROID/ALTITUDE COMPENSATOR TEST		Del. quantity  cm3/1000 strokes : 117.5  Toleran e
COMPENSATOR TEST		cm3/100.1 strokes : +- 1.5 Check tolerance
SETTING		cm3/1000s. : +- 4.5
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1300 : 11.85 : +- 0.05	BREAKAWAY
MEASUREMENT		Rack travel in mm : 10.80 Rated speed rpm : 1165 Tolerance 1/min : +- 5
Pressure hPa Rated speed rpm	500	+
Rated speed rpm	: 500	STARTING FUEL DELIVERY
Pressure hPa rack travel mm Tolerance mm	: 2.25	Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00
Pressure hPa rack travel mm Tolerance mm	: 0.70	Del. quantity + cm3/1000 strokes : 275.0 + Tolerance + cm3/1000 strokes : + 15.0 + Check tolerance - cm3/1000s. : + 19.0
START CUT-OUT		
Rated speed rpm Rated speed rpm		LOW IDLE
Check speed 1/min Check	: > 80	Del. quantity cm3/1000 strokes : 9.5
speed 1/min	: < 310	Tolerance + cm3/1000 strokes : + 3.0
FUEL DELIVERY CHA	ARACTERISTICS	
Aneroid pressure hPa	: 1300 : 700	Tolerance cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm Del. quantity _m3/1000 strokes		- cm3/1000s. : 12.0
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0	<u>‡</u>
cm3/1000S. Spreed	: <del>←</del> 5.0	End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Edition : 18.04.96 Test oil : ISO 4113 Combination No. : 9 400 087 459AA Injection pump Pump designation : PES6P120A720LS7181 EP type number : 0 412 726 824 Governor Governer design. : RQ300/1050PA911-2 Governer no. : 9 420 080 313 Cust. part No. : Customer-spec. information Customer : MBB Motor : OM447 LA Power KW : 298.0 TEST BENCH REQUIREMENTS Inlet line : 4.1 Test oil inlet temp. °C : +- 2.0 Tolerance °C Overflow valve : 1 417 413 025 Inlet press. bar : 1.5 Test nozzle holde : 1 688 901 105 assembly Opening pressure 208.5 Tolerance bar

: 1 680 750 067

Outside diameter : 6.0

x inside diameter x length mm	: 3.0° : 1000
REMARKS	
(A) INJECTION PUM Set equal deliver	
per values	
BEGINNING OF DELI	VERY
Test pressure bar Tolerance bar	: 26.0 : + 1.0
Prestroke mm Tolerance mm Check	: 5.05 : +- 0.05
tolerance mm	: + 0.10
Rack travel in mm Tolerance mm	: 10.50 : + 1.50
Firing order	: 6-2-4-1-5- : 3
Phasing	: 0-60-120-180-240 : -300
BASIC SETTING	
Rated speed rpm	: 600
Rack travel in mm Tolerance mm	: 12.40 : + 0.10
Del. quantity cm3/1000 strokes	: 195.5
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed Tolerance cm3/1000 strokes	: 5.0

Test lines

Check tolerance	+
cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	+ Rated speed rpm : 600
Rack travel in mm: 6.00	+ Aneroid pressure
Tolerance mm : +- 0.20 Del. quantity	+ Del. quantity
cm3/1000 strokes : 15.0 Tolerance	+ cm3/1000 strokes : 195.5 + Tolerance
cm3/1000 strokes : +- 3.0	+ cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 6.0	+ Check tolerance + cm3/1000s. : + 4.0
Spreed Tolerance	Spreed Tolerance
cm3/1000 strokes : 8.0	+ cm3/1000 strokes : 5.0
Check tolerance cm3/1000s. : 12.0	+ Check tolerance + cm3/1000s. : 9.0
	1
(B) SETTING OF INJECTION PUMP	Ţ
WITH GOVERNOR	+ CONTROL LEVER
CUITE OF FELLE TO AVE	control lever
GUIDE SLEEVE TRAVEL	+ position degree : 40.0 + tolerance degree : + 4.0
Rated speed rpm : 300 guide sleeve	t control lever
travel mm : 1.75	position degree : 101.0
Tolerance mm : + 0.25	tolerance degree : +- 4.0
Rated speed rpm : 1120 guide sleeve	RATED SPEED
travel mm : 7.45	rack travel mm : 11.30
Tolerance mm : +- 0.25	+ Rated speed rpm : 1103 + Tolerance 1/min : + 8
Rated speed rpm : 600	+ rack travel mm : 4.00
guide sleeve travel mm : 6.00	+ rack travel mm : 4.00 + Rated speed rpm : 1145
Tolerance mm : + 0.10	Tolerance 1/min : +- 15
Rated speed rpm : 1050	rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1300
guide sleeve travel mm : 6.50	+ Rated speed rpm : 1300
Tolerance mm : +- 0.10	<u>†</u>
Rated speed rpm : 1160	LOUIS
guide sleeve travel mm : 10.00	+ LOW IDLE
Tolerance mm : + 0.30	†
**************************************	+ control lever + position degree : 74.0
GUIDE SLEEVE POSITION	tolerance degree : + 4.0
Rated speed rpm : 600	control Lever
Rack travel in mm : 20.00	<pre>position degree : 11.0 tolerance degree : + 4.0</pre>
Tolerance mm : +- 0.80	Testing:
	T resumy.

Rated speed rpm	: 300	+ Del. quantity	
rack travel mm	: 6.00	+ cm3/1000 strok	es : 195.0
Tolerance mm	: + 0.10	+ Tolerance + cm3/1000 strok	ac · +- 2 ft
rack travel mm	: 2.00	Check tolerance	
Rated speed rpm	: 380	+ cm3/1000s.	
Tolerance 1/min	: +- 20	+ Spreed	
Ontrad amond main	. 100	+ Tolerance	
Rated speed rpm	: 100	+ cm3/1000 strok + Check toleranc	
CRT mm min.	; > 9.00	+ cm3/1000s.	
		+	
TODALIE GALIEDAL			
TORQUE CONTROL		+ hPa + Rated speed rp	: 1200 m : 750
Rated speed rpm	: 600	+ Del. quantity	
rack travel mm		+ cm3/1000 strok	
Tolerance mm		+ Tolerance	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
		+ cm3/1000 strok	
Rated speed rpm		+ Check tolerance	
rack travel mm Tolerance mm	: 12.40 : +- 0.10	+ cm3/1000s.	: + 5.0
roterance mm	· +- U.10	Spreed Tolerance	
Rated speed rpm	: 750	cm3/1000 stroke	es : 8.0
rack travel mm	: 12.40	+ Check tolerance	
Tolerance mm		+ cm3/1000s.	: 12.0
		+	
ANEROID/ALTITUDE		Aneroid pressu	re · _
COMPENSATOR TEST		Rated speed rp	m : 500
		+ Del. quantity	
		+ cm3/1000 stroke	es : 125.0
A		† Tolerance	. 40
MEASUREMENT		+ cm3/1000 stroke + Check tolerance	
Pressure hPa	: 300	- cm3/1000s.	
rack travel mm	-1.80	Spreed	
Tolerance mm	: +- 0.10	+ Tolerance	
		+ cm3/1000 stroke	
Pressure hPa	: 400	+ Check tolerance	
rack travel mm Tolerance mm	: -0.90	t cm3/1000s.	: 9.0
TOTETANCE IIII	· + U. (U	I	
		BREAKAWAY	
START CUT-OUT		+	
Datad aparad ar-	. \ 100	+ Rack travel in	mm · 11 70
Rated speed rpm Rated speed rpm	. 2 100	Rack travel in Rated speed rpm	
nated speed thii		Tolerance 1/mir	
Check		+	<del>-</del>
speed 1/min	: > 80	+	
Check			NEL THEON
speed 1/min	: < 240	STARTING FUEL E	DELIVERY
***		Rated speed rpm	: 100
FUEL DELIVERY CHA	RACTERISTICS	+ Del. quantity	
		+ cm3/1000 stroke	es : 275.0
Aneroid pressure	: 1200	† Tolerance † cm3/1000 stroke	s · +- 10 0
hPa Rated speed rpm	1200	T CIIIS/ 1000 STPORE	:5 . <del></del> 10.0
nated speed this		1	

M03

Check tolerance		
cm3/1000s.	: +-	14.0

## LOW IDLE

Rated speed rpm	:	300	
rack travel mm Tolerance mm	:	6.00 0.20	
Del. quantity	• •	0,20	
cm3/1000 strokes	;	15.0	
Tolerance			
cm3/1000 strokes	: +-	3.0	
Check tolerance			
cm3/1000s.	; +-	6.0	
Spreed			
Tolerance			
cm3/1000 strokes	:	8.0	
Check tolerance			
cm3/1000s.	:	12.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.04.96 Test oil : ISO 4113

Combination No. : 9 400 087 459AB

Injection pump

Pump designation : PES6P120A720LS7181 EP type number : 0 412 726 824

Governor

Governer design. : RQ300/1050PA911-2 Governer no. : 9 420 080 313

Cust. part No. :

Customer-spec. information
Customer : MBB
Motor : 0M447 LA
Power KW : 298.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : +- 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 13.70
Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 232.0

CIID/ 1000 Strokes . 232.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

Tolerance cm3/1000 strokes : +- Check tolerance cm3/1000s. : +- Spreed Tolerance cm3/1000 strokes : Check tolerance	9.0 15.0 3.0 6.0 8.0	Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
(B) SETTING OF INJECTION WITH GOVERNOR	PUMP	CONTROL LEVER	74.0
GUIDE SLEEVE TRAVEL	<del></del> ‡	position degree tolerance degree	
Rated speed rpm : 30 guide sleeve travel mm : 1 Tolerance mm : + 0	1.75	control lever position degree tolerance degree RATED SPEED	
Rated speed rpm : 112 guide sleeve travel mm : 7 Tolerance mm : + 0	·.45	rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm : 60 guide sleeve travel mm : 6 Tolerance mm : + 0	5.00	rack travel mm Rated speed rpm Tolerance 1/min rack travel mm	
Rated speed rpm : 105 guide sleeve travel mm : 6 Tolerance mm : + 0	5.50	Tolerance mm Rated speed rpm	: +- 0.75 : 1300
Rated speed rpm : 116 guide sleeve travel mm : 10 Tolerance mm : + 0	1.00	LOW IDLE  control lever position degree	: 75.0
GUIDE SLEEVE POSITION	+	tolerance degree	: +- 4.0
Rated speed rpm : 60	+	position degree tolerance degree	: 14.0 : + 4.0
Rack travel in mm : 20 Tolerance mm : + 0		Testing:	
FULL LOAD DELIVERY AT FUL Rated speed rpm : 60	+	Rated speed rpm rack travel mm Tolerance mm	: 6.00 : +- 0.20
	+	rack travel mm	: 2.00

Tolerance 1/min : ← 20    Cm3/1000 strokes : 224.0   Tolerance cm3/1000 strokes : ← 2.0   Check tolerance cm3/1000 strokes : ← 2.0   Check tolerance cm3/1000 strokes : ← 2.0   Check tolerance cm3/1000 strokes : ← 5.0   Spreed   Tolerance cm3/1000 strokes : ← 5.0   Spreed   Tolerance cm3/1000 strokes : ← 3.0   Check tolerance cm3/1000 strokes : ← 3.0   Check tolerance cm3/1000 strokes : ← 3.0   Check tolerance cm3/1000 strokes : ← 3.0   Check tolerance cm3/1000 strokes : ← 3.0   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.5   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check tolerance cm3/1000 strokes : ← 4.0   Check toleranc	Rated speed rpm	: 380	+	Del. quantity	
Cm3/1000 strokes : + 2.0   Check tolerance cm3/1000s.   : + 5.0   Spreed rom cat travel mm : 13.70   Tolerance mm : + 0.10   Check tolerance cm3/1000s.   : + 5.0   Check tolerance cm3/1000s.   : + 5.0   Check tolerance cm3/1000s.   : + 5.0   Check tolerance cm3/1000s.   : 12.0   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 1500   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 145.0   Check tolerance cm3/1000s.   : 12.0   Check tol			+	cm3/1000 strokes	: 224.0
Rated speed rpm : 600 rack travel mm : 13.70 Tolerance mma : + 0.10 Rated speed rpm : 1050 Rated speed rpm : 1050 rack travel mm : 13.70 Tolerance mm : + 0.10 Rated speed rpm : 1050 rack travel mm : 13.70 Tolerance mm : + 0.10 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 800 Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa : 600 Pressure hPa : 1000 Rated speed rpm : 500 Pressure hPa : 1000 Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa : 1000 Rated speed rpm : 500 Rated speed rpm : 500 Rated speed rpm : 500 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed rpm : 1000 Rated speed			I	cm3/1000 strokes	
Pressure hPa : 1100	TORQUE CONTROL		†		
Pressure hPa : 1100	Rated speed rpm	: 600	I		: +- 5.0
Pressure hPa : 1100	rack travel mm	: 13.70	+		· · · · · · · · · · · · · · · · · · ·
Pressure hPa : 1100	loterance mm	. : +- 0.10	1		: 8.0
Pressure hPa : 1100	Rated speed rpm	: 1050	+		: 12.0
Pressure hPa : 1100	rack travel mm	: 13.70 : +- 0.10	İ	Aneroid pressure	
Pressure hPa : 1100	TOCCI GITOC THII		1		: 1500
Pressure hPa : 1100	Rated speed rpm	: 800	+		: 800
Pressure hPa : 1100	rack travel mm	: 14.20	+		070.0
Pressure hPa : 1100	Tolerance mm	: +- 0.10	†		: 239.0
Pressure hPa : 1100					15
Pressure hPa : 1100	ANEROTO/ALTITUDE		I		
Pressure hPa : 1100			+		
Pressure hPa : 1100			+		
Pressure hPa : 1100			†	Tolerance	. 8.0
Pressure hPa : 1100	MEASIDEMENT		1		: 0.0
Pressure hPa : 1100	MERSONEMENT		Ţ		: 12.0
Pressure hPa : 1100	Pressure hPa		+		
Pressure hPa : 1100			+		
Pressure hPa : 1100	Tolerance mm	: +- 0.10	†		. 500
Pressure hPa : 1100	Preceire hPs	• 600	Ī		: 500
Pressure hPa : 1100			1		: 145.0
Pressure hPa : 1100			+	Tolerance	
Pressure hPa : 1100		4000	+		
Pressure hPa : 1100			1		
Pressure hPa : 1100			I		. ' 4.0
rack travel mm : 0.40 Tolerance mm : + 0.10  START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : < 220  Check speed rpm : 12.70 Rated speed rpm : 1103  Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  Check tolerance cm3/1000s. : 12.0  Rack travel in mm : 12.70 Rated speed rpm : 100 Rated speed rpm : 100 Poel quantity Cm3/1000 strokes : 275.0 Tolerance			+	Tolerance	
START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : < 220  Check Speed 1/min : > 80 Check Speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  BREAKAWAY  Rack travel in mm : 12.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	Pressure hPa	: 1100	+		
START CUT-OUT  Rated speed rpm : > 100 Rated speed rpm : < 220  Check Speed 1/min : > 80 Check Speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  BREAKAWAY  Rack travel in mm : 12.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	rack travel mm	: 0.40	†		
Rated speed rpm : > 100 Rated speed rpm : < 220  Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  Rack travel in mm : 12.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	roterance mm	0.10	Į	(11) 1000.	. 12.0
Rated speed rpm : > 100 Rated speed rpm : < 220  Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  Rack travel in mm : 12.70 Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	CTADT CUT OUT		+	DDEAKAHAY	
Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500  Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	START COT-OUT		I	OKEANAWAT	
Check speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa : 1500  Rated speed rpm : 1103 Tolerance 1/min : + 8  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance		: > 100	+		
Check speed 1/min : > 80 Check speed 1/min : < 240 STARTING FUEL DELIVERY  FUEL DELIVERY CHARACTERISTICS Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	Rated speed rpm	: < 220	†		
speed 1/min : > 80 Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  Tolerance  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance	Charle		†		
Check speed 1/min : < 240  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 1500  Tolerance  STARTING FUEL DELIVERY  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance		: > 80	I	TO LET BEILE TAILER	• •
speed 1/min : < 240  TUEL DELIVERY CHARACTERISTICS  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure  hPa : 1500  Tolerance  Tolerance	Check		+		
FUEL DELIVERY CHARACTERISTICS Rated speed rpm : 100  Del. quantity  Aneroid pressure cm3/1000 strokes : 275.0  Tolerance	speed 1/min	: < 240	+	CTARTING FUEL DEL	TUPDY
Aneroid pressure + cm3/1000 strokes : 275.0 + Tolerance			I	STANTING FUEL DEL	T A T L/ !
Aneroid pressure + cm3/1000 strokes : 275.0 + Tolerance	FUEL DELIVERY CHA	ARACTERISTICS	+		: 100
hPa : 1500 + Tolerance	Aneroid pressure		Ī		: 275.0
	•	: 1500	I		
+			+		: <del>+</del> 10.0
			+		

Check tolerance		
cm3/1000s.	: +-	14.0

## LOW IDLE

Del. quantity cm3/1000 strokes	:	15.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s.	: +-	6.0	
Spreed Tolerance			
cm3/1000 strokes Check tolerance	:	8.0	
cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.04.96 : ISO 4113 Test oil

Combination No. : 9 400 087 471

Injection pump

Pump designation : PE6P12OA32ORS3178 EP type number : 0 411 826 752

Governor

Governer design. : RQV250...950PA921-3

: D 421 813 786 Governer no.

Cust. part No. : 8125313-P02

Customer-spec. information

Customer : VOLVO-TRUCK : TD 122 F Motor Power KW : 261.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 067 Test lines

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.65 : +- 0.05 Tolerance mm

Check tolerance mm

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: + - 0.10

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 13.05 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 230.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

: +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance cm3/1000s.

9.0

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +- 3.0 : +- 6.0	Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 1.0 : +- 4.0
cm3/1000s.	: 12.0	+	
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER	
GUIDE SLEEVE TRAV	/EL	position degree tolerance degree	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 250 : 1.20 : + 0.20	control lever position degree tolerance degree	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 985 : 8.20 : + 0.10	+ RATED SPEED + rack travel mm + Rated speed rpm + Tolerance 1/min	
Rated speed rpm guide sleeve travel mm Tolerance mm	: 450 : 3.90 : + 0.30	rack travel mm Rated speed rpm Tolerance 1/min	
Rated speed rpm guide sleeve travel mm Tolerance mm		rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50 : 1200
Rated speed rpm guide sleeve	: 1060	LOW IDLE	
travel mm Tolerance mm	: 9.60 : +- 0.20	control lever position degree tolerance degree	
GUIDE SLEEVE POSI	TION	control lever	
Rated speed rpm	: 1030	position degree tolerance degree	
Rack travel in mm Tolerance mm		Testing:	
	Y AT FULL LOAD STOP	Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm Aneroid pressure hPa	: 700 : 900	Rated speed rpm	
		+ CRT mm min.	: > 6.20

Rated speed rpm	;	315	
TORQUE CONTROL			
Rated speed rpm rack travel mm Tolerance mm	: +-	700 13.05 - 0.05	

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm	;		500
Pressure hPa	:		900
rack travel mm	:		13.05
Tolerance mm	:	+	0.05

### **MEASUREMENT**

Pressure h	^o a	:	_
Rated spee	l rpm	: 5	00

Rated speed rpm : 500

600 Pressure hPa : rack travel mm 2.50 Tolerance mm : +- 0.10

Pressure hPa : 120 rack travel mm 0.35 Tolerance mm : +- 0.05

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm : 700

Del. quantity cm3/1000 strokes : 164.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. 4.0

## BREAKAWAY

Rack travel in mm : 12.00 Rated speed rpm : 985 Tolerance 1/min : +-

## STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm Tolerance mm	:	+-	20.50
Del. quantity	•	Ì	0.50
cm3/1000 strokes	:		290.0
Tolerance	_	,	10.0
cm3/1000 strokes Check tolerance	:	+-	10.0
cm3/1000s.	:	+	14.0

## LOW IDLE

Del. quantity		
cm3/1000 strokes	:	20.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 18.04.96 : ISO 4113

Combination No. : 9 400 087 478

Injection pump

Pump designation : PES6P120A720RS3256

: -2

EP type number

: 9 400 087 080

Governor

Governer design. : RQV350...1300PA1080

Governer no. : 9 420 080 339

Cust. part No. :

Customer-spec. information

Customer

: MBB

Motor

: OM 366 LA

Power KW

: 139.8

TEST BENCH REQUIREMENTS

Inlet line

: 4.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm 3.05 : + 0.05 Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 20.50

Tolerance mm : +- 0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 5.10 : +- 0.30 Tolerance mm

Del. quantity

cm3/1000 strokes : 18.5

Tolerance

cm3/1000 strokes : +-1.5

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes :

2.0

3.0

Check tolerance

cm3/1000s.

M12

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0	Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 3.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	CONTROL LEVER
GUIDE SLEEVE TRAV	/EL +	position degree : 112.0 tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 1350	RATED SPEED
travel mm Tolerance mm	+	rack travel mm : 9.70 Rated speed rpm : 1345 Tolerance 1/min : +- 5
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1100 : 6.45 : + 0.25	rack travel mm : 4.00 Rated speed rpm : 1440 Tolerance 1/min : +- 15
Rated speed rpm guide sleeve travel mm Tolerance mm	<del>}</del>	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1550
Rated speed rpm guide sleeve travel mm Tolerance mm	: 650 : 4.15 : +- 0.25	LOW IDLE
Rated speed rpm guide sleeve travel mm	+	<pre>control lever position degree : 80.0 tolerance degree : +- 4.0 Testing:</pre>
Tolerance mm		Rated speed rpm : 350
GUIDE SLEEVE POSI	TION	rack travel mm : 7.65 Tolerance mm : +- 0.15
Rated speed rpm	+	Rated speed rpm : 250
Rack travel in mm Tolerance mm		CRT mm min. : > 9.50
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm : 375
Rated speed rpm Aneroid pressure	: 1000	TORQUE CONTROL
hPa	: - ‡	Rated speed rpm : 1000 rack travel mm : 5.10

Tolerance mm	: <b>←</b> 0.30	Spreed
Rated speed rpm	: 1300	+ Tolerance + cm3/1000 strokes : 8.0
rack travel mm		+ Check tolerance
Tolerance mm		+ cm3/1000s. : 12.0
		+
Rated speed rpm		+ Aneroid pressure
rack travel mm	: 10.80	+ hPa : 1200
Tolerance mm	: + 0.10	+ Rated speed rpm : 800 + Del. quantity
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : +- 2.0
		+ Check tolerance
000000		+ cm3/1000s. : + 5.0
SETTING		+ Spreed + Tolerance
Rated speed rpm	: 500	cm3/1000 strokes : 8.0
Pressure hPa		Check tolerance
rack travel mm		+ cm3/1000s. : 12.0
Tolerance mm	: +- 0.10	†
MEACHDEMENT		+ Aneroid pressure
MEASUREMENT		+ hPa : - Rated speed rpm : 500
Pressure hPa	: -	Del. quantity
Rated speed rpm	500	+ cm3/1000 strokes : 70.0
,		+ Tolerance
Rated speed rpm	: 500	+ cm3/1000 strokes : +- 1.0
Decesion hos	: 340	+ Check tolerance + cm3/1000S. : + 4.0
Pressure hPa rack travel mm	: 340	+ cm3/1000S. : + 4.0 + Spreed
Tolerance mm	: + 0.15	Tolerance
10201 01100 11111	• • • • • • • • • • • • • • • • • • • •	+ cm3/1000 strokes : 8.0
Pressure hPa	: 250	+ Check tolerance
rack travel mm	: 0.60	+ cm3/1000s. : 12.0
Tolerance mm	: +- 0.10	Ť
		BREAKAWAY
START CUT-OUT		+
		+
Rated speed rpm	: > 100	+ Rack travel in mm: 9.70
Rated speed rpm	: < 270	+ Rated speed rpm : 1345 + Tolerance 1/min : +- 5
Check		T total tota
speed 1/min	: > 80	+
Check		
speed 1/min	: < 290	+ STARTING FUEL DELIVERY
		Rated speed rpm : 100
FUEL DELIVERY CHA	RACTERISTICS	+ Del. quantity
7000 0000000000000000000000000000000000	WO TENED TEO	+ cm3/1000 strokes : 100.0
Aneroid pressure		+ Tolerance
hPa	: 1200	+ cm3/1000 strokes : + 10.0
Rated speed rpm	: 1300	+ Check tolerance
Del. quantity cm3/1000 strokes	: 141.0	$\pm$ cm3/1000s. : +- 14.0
Tolerance	. 141.0	
cm3/1000 strokes	: +- 1.0	+
Check tolerance		
cm3/1000s.	: +- 4.0	+ LOW IDLE

Del. quantity		
cm3/1000 strokes	;	17.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	; +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	;	8.0
Check tolerance		
cm3/1000s.	;	12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.04.96 : ISO 4113

Combination No. : 9 400 087 487

Injection pump

Pump designation : PES6P120A720LS7176

: -10

EP type number

: D 412 726 869

Governor

Governer design. : RQV300...1050PA1142

Governer no.

: 9 420 080 368

Cust. part No. :

Customer-spec. information

Customer

: MBB

Motor

: OM447 A

Power KW

: 210.0

## TEST BENCH REQUIREMENTS

Inlet line

: 4.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 075

Outside diameter :

8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.25 Tolerance mm : + - 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

: 6-2-4-1-5-Firing order

: 3

: 0-60-120-180-240 Phasing

: -300

BASIC SETTING

600 Rated speed rpm :

Rack travel in mm : 12.75

: +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 177.0

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

cm3/1000s.

: **←** 4.0

Spreed

Tolerance

cm3/1000 strokes :

5.0

Check tolerance		+	Aneroid pressure	
cm3/1000S.	: 9.0	+	hPa	: 600
		+	Del. quantity	
Del. quantity		+	cm3/1000 strokes	: 177.0
cm3/1000 strokes	: 13.0	+	Tolerance	
Tolerance		+	cm3/1000 strokes	: +- 1.0
cm3/1000 strokes	: +- 3.0	+	Check tolerance	
Check tolerance	• • • •	1	cm3/1000s.	: +- 4.0
cm3/1000s.	: <del>+-</del> 6.0	1	Spreed	
Spreed		1	Tolerance	
Tolerance		1	cm3/1000 strokes	: 5.0
cm3/1000 strokes	: 8.0	1	Check tolerance	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Check tolerance		1	cm3/1000s.	: 9.0
cm3/1000s.	: 12.0	1	· · · · · · · · · · · · · · · · · · ·	. ,
CIRC 100001		1		
		1		
(B) SETTING OF IN	LIECTION PUMP	1	CONTROL LEVER	
WITH GOVERNOR	0 20 1 20 17 7 01 11	1	CONTINOE EEVEN	
WITH GOVERNOR		1	control lever	
		1	position degree	: 59.0
GUIDE SLEEVE TRAV	EI	Ι	tolerance degree	
GOIDE SEEEVE IRAV		Ι	toterance degree	. +- 4.0
Rated speed rpm	: 300	I	control lever	
guide sleeve	. 500	Ţ		: 114.0
travel mm	: 1.40	T	position degree	
	: +- 0.20	T	tolerance degree	; <del></del> 4.0
Tolerance mm	; — 0.20	T	DATES COECS	
Deded award awa	: 1100	T	RATED SPEED	
Rated speed rpm	: 1100	+		42.00
guide sleeve	. 7.45	†	rack travel mm	: 12.00
travel mm	: 7.65	†	Rated speed rpm	: 1103
Tolerance mm	: +- 0.25	†	Tolerance 1/min	: <del></del> 8
	500	+		
Rated speed rpm	: 500	+	rack travel mm	: 4.00
guide sleeve	7 05	+	Rated speed rpm	
travel mm	3.25	†	Tolerance 1/min	: +- 15
Tolerance mm	: +- 0.25	+		
		+	rack travel mm	: 0.75
Rated speed rpm	: 900	+	Tolerance mm	: +- 0.75
guide sleeve		+	Rated speed rpm	: 1300
travel mm	: 5.85	+		
Tolerance mm	: <del>+</del> 0.25	+		
	4040	†		
Rated speed rpm	: 1210	+	LOW IDLE	
guide sleeve		†		
travel mm	: 9.55	+		
Tolerance mm	: <del>+-</del> 0.25	+	control lever	
		+	position degree	: 68.0
		+	tolerance degree	: +- 4.0
GUIDE SLEEVE POSIT	TION	+		
	4440	+	control lever	
Rated speed rpm	: 1140	+	position degree	
		+	tolerance degree	: +- 4.0
Rack travel in mm		+		
Tolerance mm	: +- 1.30	+	Testing:	
		+		
		+	Rated speed rpm	: 300
FULL LOAD DELIVERY	Y AT FULL LOAD STOP	+	rack travel mm	: 6.20
		+	Tolerance mm	: +- 0.20
Rated speed rpm	: 600	+		
, ,		+	Rated speed rpm	: 100
		•		

CRT mm min. Rated speed rpm	: > 8.00 : 375	<pre>Del. quantity cm3/1000 strokes : 182.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance</pre>
TORQUE CONTROL		
Rated speed rpm rack travel mm		Tolerance cm3/1000 strokes : 8.0 Check tolerance
Tolerance mm		+ cm3/1000s. : 12.0
Rated speed rpm		+ Aneroid pressure
rack travel mm		+ hPa : 1000
Tolerance mm	: +- 0.05	+ Rated speed rpm : 750
Dakad maasad was	: 750	+ Del. quantity
Rated speed rpm rack travel mm		+ cm3/1000 strokes : 186.5 + Tolerance
Tolerance mm	: + 0.05	- cm3/1000 strokes : +- 2.0
TOCCI GITCS THE	0.00	- Check tolerance
		- cm3/1000s. : +- 5.0
ANEROID/ALTITUDE		+ Spreed
COMPENSATOR TEST		+ Tolerance
		+ cm3/1000 strokes : 8.0
		+ Check tolerance
MEASUREMENT	•	- cm3/1000s. : 12.0
5 LD.	. 250	+ Aneroid pressure
Pressure hPa	: 250 : -1.30	+ hPa : -
rack travel mm	: -1.30 : + 0.10	+ Rated speed rpm : 500
Tolerance mm	: - 0.10	+ Del. quantity + cm3/1000 strokes : 132.0
Pressure hPa	: 380	Tolerance
rack travel mm	: -0.40	+ cm3/1000 strokes : +- 1.0
Tolerance mm		+ Check tolerance
1000.4.100		+  cm3/1000s. : + 4.0
Pressure hPa	: 690	+ Spreed
		+ Tolerance
Pressure hPa	: 770	+ cm3/1000 strokes : 5.0
rack travel mm	: 0.30	+ Check tolerance
Tolerance mm	: <del>+-</del> 0.10	+ cm3/1000s. : 9.0
START CUT-OUT		BREAKAWAY
Rated speed rpm	: > 100	I
Rated speed rom		Rack travel in mm: 12.00
racea opeca rpm		+ Rated speed rpm : 1103
Check		+ Tolerance 1/min : + 8
speed 1/min	: > 80	+
Check	<b>-</b> 1-	+
speed 1/min	: < 240	STARTING FUEL DELIVERY
FUEL DELIVERY CH	ARACTERISTICS	- + Rated speed rpm : 100
		+ Del. quantity
Aneroid pressure		+ cm3/1000 strokes : 210.0
hPa	: 1000	† Tolerance
Rated speed rpm	: 1050	+ cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : +- 4.0

LOW IDLE

Del. quantity
cm3/1000 strokes : 13.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance
cm3/1000s. : +- 6.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 17.04.96 Edition Test oil : ISO 4113

Combination No. : 9 400 087 493

Injection pump

Pump designation : PES6P120A720LS7114

: -13

EP type number : 0 412 726 867

Governor

Governer design: RQ300/1050PA911-5

: 9 420 080 375 Governer no.

Cust. part No. : 0250747002

Customer-spec. information Customer : MBB : OM447 LA Motor Power KW : 230.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.25 : + 0.05Tolerance mm

Check

tolerance mm : + - 0.10

Rack travel in mm: 10.50 : +- 1.50 Tolerance mm

: 6-2-4-1-5-Firing order : 3

: 0-60-120-180-240 Phasing

: -300

### BASIC SETTING

Rated speed rpm : 600

Rack travel in mm: 12.40 : + 0.10Tolerance mm

Del. quantity cm3/1000 strokes : 195.5

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 5.0

M20

Check tolerance	t
cm3/1000s. : 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 300	Rated speed rpm : 600
Rack travel in mm : 6.00 Tolerance mm : +- 0.20	Aneroid pressure : 1050
Del. quantity	Del. quantity
cm3/1000 strokes : 13.5 - Tolerance -	cm3/1000 strokes : 195.5 Tolerance
cm3/1000 strokes : +- 3.0 Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : +- 6.0 Spreed	cm3/1000s. : +- 4.0 Spreed
Tolerance - cm3/1000 strokes : 8.0 -	Tolerance : 5.0
Check tolerance - cm3/1000s. : 12.0 -	- Check tolerance - cm3/1000s. : 9.0
3	
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 40.0
+	tolerance degree : +- 4.0
Rated speed rpm : 300 - guide sleeve -	- control lever
travel mm : 2.95 Tolerance mm : + 0.15	position degree : 101.0 tolerance degree : +- 4.0
+	- RATED SPEED
guide sleeve	
travel mm : 6.70 + Tolerance mm : + 0.20	rack travel mm : 11.30 Rated speed rpm : 1103
Rated speed rpm : 600	Tolerance 1/min : +- 8
quide sleeve	rack travel mm : 4.00
travel mm : 6.00 + Tolerance mm : - 0.10	- Rated speed rpm : 1165 - Tolerance 1/min : +- 15
Rated speed rpm : 1000	- - rack travel mm : 0.75
guide sleeve travel mm : 6.40	- Tolerance mm : +- 0.75 - Rated speed rpm : 1300
Tolerance mm : + 0.10	- Nated Speed (piii : 1505
Rated speed rpm : 1175	
guide sleeve travel mm : 9.75 Tolerance mm : + 0.25	- ŁOW IDLE -
Tolerance mm : + 0.25	- control lever
	- position degree : 74.0
GUIDE SLEEVE POSITION	tolerance degree : +- 4.0
Rated speed rpm : 600	- control lever - position degree : 11.0
Rack travel in mm: 20.00	tolerance degree : +- 4.0
Tolerance mm : +- 0.80	- Testing:

Rated speed rpm	: 300	+ Del. quantity	
rack travel mm Tolerance mm	: 6.00	+ cm3/1000 strokes : 195.0	
Tolerance mm	: +- 0.10	+ Tolerance	
TO COT CITICO TIAN	0.10	+ cm3/1000 strokes : + 2.0	
	. 2.00		
rack travel mm		+ Check tolerance	
Rated speed rpm		+ cm3/1000s. : $+$ 5.0	
Tolerance 1/min	: +- 20	+ Spreed	
		+ Tolerance	
Rated speed rpm	: 100	+ cm3/1000 strokes : 8.0	
		+ Check tolerance	
CRT mm min.	; > 9.00	+ cm3/1000s. : 12.0	
CAT HAIR HETEL.	. / /.00	T (1107) 10000 . 12.0	
		Anamaid procesure	
TODOUE CONTROL		Aneroid pressure	
TORQUE CONTROL		† hPa : 1200	
		+ Rated speed rpm : 750	
Rated speed rpm	: 600	+ Del. quantity	
rack travel mm	: 12.40	+ cm3/1000 strokes : 198.5	
rack travel mm Tolerance mm	: + 0.10	+ Tolerance	
· mries unu		+ cm3/1000 strokes : + 2.0	
Rated speed rpm	. 1050	Check tolerance	
veren sheen thu	. 42/0		
rack travel mm		+ cm3/1000s. : +- 5.0	
Tolerance mm	: +- 0.10	+ Spreed	
		+ Tolerance	
Rated speed rpm	: 750	+ cm3/1000 strokes : 8.0	
rack travel mm	: 12.40	+ Check tolerance	
Tolerance mm	: +- 0.10	+ cm3/1000s. : 12.0	
rocerance imi	0.10	- CIRD/ 10005 12.0	
		Ť	
		Aneroid pressure	
ANEROID/ALTITUDE		+ hPa : -	
COMPENSATOR TEST		+ Rated speed rpm : 500	
		+ Del. quantity	
		+ cm3/1000 strokes : 126.0	
		+ Tolerance	
MEASIDEMENT		+ cm3/1000 strokes : +- 1.0	
MEASUREMENT		Charle to large services . The large services .	
	700	hPa : - Rated speed rpm : 500  Del. quantity : 126.0  Tolerance : + 1.0  Check tolerance : + 4.0  Spreed : Tolerance : + 4.0	
Pressure hPa	: 300	+ cm3/1000s. : + 4.0	
rack travel mm	: -1.80	+ Spreed	
Tolerance mm	: +- 0.10	+ Tolerance	
		+ cm3/1000 strokes : 5.0	
Pressure hPa	• ፈሰበ	+ Check tolerance	
rack travel mm	: -0.90	T cm3/1000s. : 9.0	
rack travel mm	0.70	T (11137 10003 9.0	
Tolerance mm	; +- 0.70	†	
***************************************			
START CUT-OUT		†	
		+	
Rated speed rpm	: > 100	+ Rack travel in mm : 11.30	
Rated speed rpm	: < 220	+ Rated speed rpm : 1103	
		+ Tolerance 1/min : +- 8	
Check			
	. \ 00	Ţ	
speed 1/min	. > 00	<b>T</b>	
Check			
speed 1/min	: < 240	+ STARTING FUEL DELIVERY	
		+	
		Rated speed rpm : 100	
FUEL DELIVERY CHA	ARACTERISTICS	+ Del. quantity	
		+ cm3/1000 strokes : 230.0	
Aneroid pressure		+ Tolerance	
hPa	: 1200	+ cm3/1000 strokes : +- 10.0	
Rated speed rpm	1050		
rateu speed rpm	יטכטו	T	

Check tolerance		
cm3/1000S.	: +-	14.0

# LOW IDLE

Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.00 : + 0.20
Del. quantity cm3/1000 strokes Tolerance	: 13.5
cm3/1000 strokes	<b>:</b> ← 3.0
Check tolerance cm3/1000S. Spreed	: <del>+-</del> 6.0
Tolerance cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.04.96 Edition : ISO 4113 Test oil

Combination No. : 9 400 093 227

Injection pump

Pump designation : PES6A85D41ORS2756 EP type number : 9 400 093 006

Governor

Governer design. : RSV325...1150A1C1168

: 9 420 083 293 Governer no.

Cust. part No. :

Customer-spec. information

: DEUTZ-ARGENTINA Customer

Motor : BF6L913 : 118.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance *C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 har

Tolerance bar : +- 1.5

Test Lines : 1 680 750 003

Outside diameter : 6.0 x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 32.0 Tolerance bar : +- 1.0

Prestroke mm 1.95 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

## BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm: 11.35 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 73.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance cm3/1000s.

: <del>+-</del> 2.5

Spreed

Tolerance

cm3/1000 strokes :

3.0

Check tolerance

cm3/1000s. 7.0

Del. quantity	
cm3/1000 strokes	: 11.0
Tolerance	
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 4,5
Check tolerance	
cm3/1000s.	: 7.0
(D) OPTTING OF THE	APOTTAN DUMB
(B) SETTING OF IN- WITH GOVERNOR	TECITON LOWL
W	
GUIDE SLEEVE POSI	TION
Rated speed rpm	: 800
Rack travel in mm	: 0.65
Tolerance mm	: +- 0.35
governen ennång	
governor spring pre-tension	
click setting x	: 5.00
FULL LOAD DELIVERY	Y AT FULL LOAD STOP
Rated speed rpm	: 1150
Aneroid pressure	. 1130
hPa	-
Del. quantity cm3/1000 strokes	: 73.0
Tolerance	, , , , , , , , , , , , , , , , , , , ,
cm3/1000 strokes	: +- 0.5
Check tolerance cm3/1000s.	: +- 2.5
Spreed	
Tolerance cm3/1000 strokes	: 3.0
Check tolerance	, 5.0
cm3/1000s.	: 7.0
CONTROL LEVED	
CONTROL LEVER	
control lever	. 11/ 0
control lever	: 114.0 : +- 4.0
control lever position degree tolerance degree	: 114.0 : +- 4.0
control lever	: 114.0 : +- 4.0
control lever position degree tolerance degree	: +- 4.0
control lever position degree tolerance degree RATED SPEED	: +- 4.0

Rated speed rpm Folerance 1/min	4.00 1235
rack travel mm Folerance mm Rated speed rpm	: 0.85 : +- 0.55
OW IDLE	
control lever position degree colerance degree	: 77.0 : +- 4.0
Setting point w/	out bumper spring
Rated speed rpm rack travel mm	
esting:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 8.00 : +- 0.10
rack travel mm lated speed rpm Tolerance 1/min	
ated speed rpm	: 100
RT mm min.	: > 19.00
ORQUE CONTROL	
ated speed rpm ack travel mm olerance mm	: 1150 : 11.35 : ← 0.05
ated speed rpm ack travel mm olerance mm	: 500 : 13.05 : + 0.05
ated speed rpm ack travel mm olerance mm	: 800 : 12.35 : ← 0.15

Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	500 : 79.5 : + 1.5 : + 3.5	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - 800	
BREAKAWAY	<del></del>	<del></del>
Rack travel in mm Rated speed rpm Tolerance 1/min	10.30 : 1195 : +- 5	
STARTING FUEL DEL	.IVERY	·
Rated speed rpm rack travel mm Tolerance mm	: 100 : 20.00 : + 1.00	
LOW IDLE		
LOW IDLE  Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 11.0 : +- 2.0 : +- 4.0	
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 2.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24.04.96 : ISO 4113 Test oil

Combination No. : 9 400 093 228

Injection pump

Pump designation : PES5A80D410RS2526 EP type number : 9 400 093 007

Governor

Governer design. : RSV325...1075A1C1167

: 9 420 083 292 Governer no.

Cust. part No. :

Customer-spec. information Customer : DEUTZ ARG. Motor : F5L913 Power KW : 87.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 1 419 992 198

1.5 Inlet press. bar :

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : +- 1.5 Tolerance bar

: 1 680 750 003 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## **©**EGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm 1.95 : + - 0.05Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

: 1-3-5-4-2 Firing order

Phasing : 0-72-144-216-288

### BASIC SETTING

Rated speed rpm : 1075

Rack travel in mm : 9.45 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 53.0

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance cm3/1000s.

: +-2.0

Spreed

Tolerance

cm3/1000 strokes :

2.5

Check tolerance

4.0 cm3/1000s.

Del. quantity		+
cm3/1000 strokes Tolerance	: 7.5	rack travel mm : 4.00 Rated speed rpm : 1165
cm3/1000 strokes Check tolerance	: +- 1.5	Tolerance 1/min : +- 15
cm3/1000s. Spreed	; +- 3.5	rack travel mm : 0.85 Tolerance mm : + 0.55
Tolerance cm3/1000 strokes Check tolerance	: 4.0	Rated speed rpm : 1320
cm3/1000s.	: 6.0	LOW IDLE
(B) SETTING OF IN	NECTION PUMP	‡
WITH GOVERNOR		control lever position degree : 84.0 tolerance degree : + 4.0
GUIDE SLEEVE POSI	TION	Setting point w/out bumper spring
Rated speed rpm	: 800	Rated speed rpm : 325 rack travel mm : 6.00
Rack travel in mm Tolerance mm		Testing:
governor spring		Rated speed rpm : 325
pre-tension click setting x	: 6.80	+ rack travel mm : 6.50 + Tolerance mm : + 0.10
orrow occorning A	. 5,55	+
FULL LOAD DELIVER	Y AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 540 Tolerance 1/min : +- 30
Rated speed rpm Aneroid pressure	: 1075	+ Rated speed rpm : 100
hPa Del. quantity	: -	+ CRT mm min. : > 19.00
cm3/1000 strokes Tolerance	: 53.0	
cm3/1000 strokes Check tolerance	: +- 0.5	TORQUE CONTROL
cm3/1000s. Spreed	: +- 2.0	Rated speed rpm : 1075 + rack travel mm : 9.45
Tolerance	0.5	+ Tolerance mm : + 0.05
cm3/1000 strokes Check tolerance	: 2.5	+ Rated speed rpm : 500
cm3/1000s.	: 4.0	+ rack travel mm : 11.25
		+
CONTROL LEVER		+ Rated speed rpm : 800 + rack travel mm : 10.55
		Tolerance mm : +- 0.15
control lever position degree tolerance degree		† † †
RATED SPEED		T
rack travel mm	: 8.40	+
Rated speed rpm Tolerance 1/min	: 1120 : + 5	+ Aneroid pressure + hPa : -

Rated speed rpm	: 500
Del. quantity cm3/1000 strokes	: 62.5
Tolerance	
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s.	: +- 3.0
Aneroid pressure	
hPa	. 200
Rated speed rpm Del. quantity	: 800
cm3/1000 strokes	: 58.0
Tolerance cm3/1000 strokes	: +~ 1.5
Check tolerance	7.0
cm3/1000s.	: + 3.0
BREAKAWAY	
Rack travel in mm	: 8.40
Rated speed rpm	: 1120
Tolerance 1/min	: +- 5
STARTING FUEL DELI	IVERY
Rated speed rpm	: 100
rack travel mm Tolerance mm	: 20.00 : +- 1.00
TO COT GITTED THAI	
LOW IDLE	
Del. quantity cm3/1000 strokes	: 7.5
Tolerance	
cm3/1000 strokes Check tolerance	: + 1.5
cm3/1000s.	: <del>+-</del> 3.5
Spreed Talerane	
Tolerance cm3/1000 strokes	: 4.0
Check tolerance	. 40
cm3/1000≇.	: 6.0
End of test specif	ication sheet

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24,04,96 : ISO 4113 Test oil

Combination No. : 9 400 093 229

Injection pump

Pump designation : PES4A80D410RS2523 EP type number : 9 400 093 008

Governor

Governer design. : RSV325...1075A1C1167

: 9 420 083 292 Governer no.

Cust. part No. :

Customer-spec. information : DEUTZ ARG. Customer : F4L913 Motor Power KW 56.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 : + 1.5 Tolerance bar

Test Lines : 1 680 750 003

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values ____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 1.95 : + - 0.05Tolerance mm Check

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: + 0.10

Phasing : 0-90-180-270

### BASIC SETTING

tolerance mm

Rated speed rpm : 1075

Rack travel in mm: 10.25 : +- 0.05 Tolerance mm

Del. quantity cm3/1000 strokes : 60.5

Tolerance

cm3/1000 strokes : +-0.5

Check tolerance cm3/1000s.

2.0 : +--

Spreed

Tolerance

cm3/1000 strokes :

2.5

Check tolerance

cm3/1000s. 4.0

NO2

Del. quantity cm3/1000 strokes : 7.5 Tolerance cm3/1000 strokes : + 1.5	rack travel mm : 4.00 Rated speed rpm : 1175 Tolerance 1/min : +- 15
Check tolerance cm3/1000s. : + 3.5 Spreed Tolerance cm3/1000 strokes : 4.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1320
Check tolerance cm3/1000s. : 6.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 85.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 325 rack travel mm : 6.00
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Testing:
governor spring pre-tension click setting x : 7.00	Rated speed rpm : 325 rack travel mm : 6.50 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 550 Tolerance 1/min : +- 30
Rated speed rpm : 1075 Aneroid pressure hPa : -	Rated speed rpm : 100
Del. quantity + cm3/1000 strokes : 60.5 + Tolerance + Cm3/1000 strokes : 60.5 + Cm3/1000 strokes	CRT mm min. : > 19.00
cm3/1000 strokes : +- 0.5 Check tolerance	TORQUE CONTROL
cm3/1000S. : + 2.0 + Spreed + Tolerance cm3/1000 strokes : 2.5 + 2.0	Rated speed rpm : 1075 rack travel mm : 10.25 Tolefance mm : + 0.05
Check tolerance cm3/1000s. : 4.0	Rated speed rpm : 500 rack travel mm : 11.05 Tolerance mm : + 0.05
CONTROL LEVER	Rated speed rpm : 750 rack travel mm : 10.65 Tolerance mm : + 0.15
control lever position degree : 119.0 tolerance degree : + 4.0	
RATED SPEED	FUEL DELIVERY CHARACTERISTICS
rack travel mm : 9.20 + Rated speed rpm : 1120 + Tolerance 1/min : + 5	Aneroid pressure hPa : -

500 61.0 1.5 3.0 250 59.0 1.5 3.0 9.20 20 5
1.5 3.0 - 250 59.0 1.5 3.0
3.0 - ?50 59.0 1.5 3.0
- 250 59.0 1.5 3.0
59.0 1.5 3.0 9.20 20
59.0 1.5 3.0 9.20 20
59.0 1.5 3.0 9.20 20
1.5 3.0 9.20 20
3.0 9.20 20
9.20 20
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20
00
0.00 1.00
1.00
7.5
1.5
3.5
4.0
6.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 22.04.96 Test oil : ISO 4113

Combination No. : 0 400 074 885

Injection pump

Pump designation : PES4M55C32ORS167 EP type number : 0 410 054 960

Governor

Governer design. : RSF400/2000M56-14 Governer no. : 0 420 021 271

Cust. part No. :

Customer-spec. information

Customer : DPICO

Motor : 0M6D1-2.31 (Exp)

Power KW : 58.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

148.5 bar Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

## BEGINNING OF DELIVERY

Test pressure bar: Tolerance bar : + 1.0

2.05 Prestroke mm Tolerance mm : + 0.05Check

tolerance mm : + - 0.10

Rack travel in mm: 21.00 : + 1.00 Tolerance mm

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

*NW after s.o.d. : 15.50 Tolerance : ← 0.20

Check

: +- 0.30 tolerance °NW

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.15 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 38.5

Tolerance

cm3/1000 strokes 0.5

Check tolerance

cm3/1000s. 1.5

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance +	
cm3/1000s. : 3.0 +	Rated speed rpm : 1000
Rated speed rpm : 400	CRT mm max. : 1.45
nated speed (pill : 400	Civi light lidx
Rack travel in mm: 5.00	
Tolerance mm : + 0.10 +	LOW IDLE
Del. quantity + cm3/1000 strokes : 6.5 +	
Tolerance	control lever
cm3/1000 strokes : + 0.5	position degree : 14.0
Spreed +	tolerance degree : +- 2.0
Tolerance + cm3/1000 strokes : 1.0 +	Cotting point Wort burner enrice
cm5/1000 strokes : 1.0	Setting point w/out bumper spring Rated speed rpm : 400
+	rack travel mm : 5.00
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	SET IDLE AUXILIARY SPRING
	Rated speed rpm : 500
IDLE STAGE	
+	rack travel mm : 3.40 Tolerance mm : + 0.10
2.1.4	t a matem * ato asso
Rack travel in mm: 6.25 + Tolerance mm: + 0.25 +	Load pick-up
+ Oceranice mm	Rated speed rpm : 250
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : 12.50
Rated speed rpm : 1000	Rated speed rpm : 1000
Ref. pressure +	The special rate of the sp
ALDA / ADA hPa : 1100	CRT mm max. : 1.45
Del. quantity + cm3/1000 strokes : 38.5 +	rack travel mm : 5.00
Tolerance	rack travel mm : 5.00 Rated speed rpm : 400
cm3/1000 strokes : +- 0.5 +	
Check tolerance +	
cm3/1000s. : + 1.5	TOPOUT CONTROL
Spreed + Tolerance +	TORQUE CONTROL
cm3/1000 strokes : 2.5	Rated speed rpm : 1000
Check tolerance +	rack travel mm : 12.15
cm3/1000s. : 3.0	Tolerance mm : + 0.05
	Rated speed rpm : 1800
RATED SPEED	rack travel mm : 11.90
+	Tolerance mm : +- 0.10
+	Onted around are a 2000
control lever + position degree : 50.0 +	Rated speed rpm : 2000 rack travel mm : 11.80
	Tolerance mm : +- 0.10
rack travel mm : 7.40	
Rated speed rpm : 2250 +	AD HICTMENT TECT ADA/ALDA
rack travel mm : 0.50	ADJUSTMENT TEST ADA/ALDA
Tolerance mm : + 0.50	SETTING
Rated speed rpm : 2550 +	
+	Rated speed rpm : 1000
SET TO E CONTROL   EVED DOSTITION	Ref. pressure ALDA / ADA hPa : 940
SET IDLE CONTROL LEVER POSITION +	NEVA / NVA HED . 340

rack travel mm Tolerance mm		STARTING FUEL DELIVERY
MEASUREMENT		+ Rated speed rpm : 100
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 900 : -0.40	rack travel mm : 21.60 Tolerance mm : +- 1.50 Del. quantity cm3/1000 strokes : 59.0 Tolerance
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 750 : -1.50	cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 5.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 6.0
FUEL DELIVERY CHA	ARACTERISTICS	<u> </u>
Ref. pressure ALDA / ADA hPa Rated speed rpm Del. quantity	: 1100 : 1800	LOW IDLE  Del. quantity
cm3/1000 strokes Tolerance		cm3/1000 strokes : 7.8 Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s. Spreed		- cm3/1000s. : + 2.3 - Spreed - Check tolerance - cm3/1000s. : 1.5
Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 2.5 : 3.0	<del></del>
Ref. pressure ALDA / ADA hPa Rated speed rpm Spreed		Grad :> 47.00 Grad :< 44.50
Del. quantity cm3/1000 strokes Tolerance	: 41.0	SETTING PNEUMATIC FAST IDLE (ELA)
cm3/1000 strokes Check tolerance cm3/1000s.		control lever position degree : 14.0
Spreed Tolerance cm3/1000 strokes	: 2.5	tolerance degree : + 2.0  Rated speed rpm : 425
Check tolerance cm3/1000s.	: 3.0	Rack travel in mm: 8.50 Tolerance mm: + 0.80 Del. quantity
HIGH IDLE	,	- cm3/1000 strokes : 21.5 - Tolerance - cm3/1000 strokes : + 3.5
Ref. pressure ALDA / ADA hPa	: 1100	- Check tolerance - cm3/1000s. : + 4.5 - Vacuum hPa : 400.0

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever

position degree : 14.0 tolerance degree : + 2.0

control lever

position degree : 50.0

**ADJUSTMENT** 

control lever

position degree : 50.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 400

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17,04,96 : ISO 4113 Test oil

Combination No. : 0 400 075 922

Injection pump

Pump designation : PES5M55C32ORS168 EP type number : 0 410 055 978

Governor

Governer design. : RSF385/2000M56-15 Governer no. : 0 420 021 272

Cust. part No. :

Customer-spec. information Customer : DPICO Motor

: 0M602-2.9L : 70.0

Power KW

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

: 1 688 901 111 assembly

Opening pressure

148.5 bar Tolerance bar

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values _____

### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.05 : +- 0.05Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-2-4-5-3

: 0-72-144-216-288 Phasing

Start of delivery blocking

*NW after s.o.d. : 15.50 : + - 0.20Tolerance Check

tolerance °NW : +- 0.30

: 1 Barrel no.

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm: 12.15 Tolerance mm :  $\leftarrow$  0.05

Del. quantity cm3/1000 strokes : 38.5

Tolerance cm3/1000 strokes : +-0.5

Check tolerance : +- 1.5 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 2.5

6h - 1 - 4 - 1 - 1 - 1 - 1 - 1	1	
Check tolerance cm3/1000s.	: 3.0	Rated speed rpm : 1000
Rated speed rpm	; 385	CRT mm max. : 1.45
Rack travel in mm Tolerance mm Del. quantity		LOW IDLE
cm3/1000 strokes Tolerance	<del>-</del>	control lever
cm3/1000 strokes Spreed	: +- 0.5	position degree : 14.0 tolerance degree : +- 2.0
Tolerance cm3/1000 strokes	: 1.0	Setting point w/out bumper spring Rated speed rpm : 385
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	rack travel mm : 5.70  SET IDLE AUXILIARY SPRING
***		Rated speed rpm : 500
IDLE STAGE	+	rack travel mm : 3.70 Tolerance mm : +- 0.10
Rack travel in mm Tolerance mm		Load pick-up
	<u> </u>	Rated speed rpm : 250
FULL LOAD DELIVERY	AT FULL LOAD STOP	CRT mm min. : 12.50
Rated speed rpm Ref. pressure	: 1000	Rated speed rpm : 1000
ALDA / ADA hPa Del. quantity	: 1100	CRT mm max. : 1.45
cm3/1000 strokes Tolerance	+	rack travel mm : 5.70 Rated speed rpm : 385
cm3/1000 strokes Check tolerance	+	
cm3/1000s. Spreed	: +- 1.5	TORQUE CONTROL
Tolerance cm3/1000 strokes	: 2.5	Rated speed rpm : 1000 rack travel mm : 12.15
Check tolerance cm3/1000s.	: 3.0	rack travel mm : 12.15 Tolerance mm : + 0.05
RATED SPEED	<del></del>	Rated speed rpm : 1800 rack travel mm : 12.00 Tolerance mm : +- 0.10
control lever position degree	: 50.0	Rated speed rpm : 2000 rack travel mm : 11.80 Tolerance mm : + 0.10
rack travel mm Rated speed rpm	: 7.40 : 2250	TOCCTURE TO U. TO
rack travel mm	: 0.50	ADJUSTMENT TEST ADA/ALDA
Tolerance mm	: +- 0.50 : 2550	SETTING
		Rated speed rpm : 1000 Ref. pressure
SET IDLE CONTROL L	EVER POSITION +	ALDA / ADA hPa : 940

rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm Ref. pressure ALDA / ADA hPa	: +- 0.10 : 1000 : 900	STARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 21.60 Tolerance mm : +- 1.50 Del. quantity
rack travel mm Tolerance mm	: -0.40 : +- 0.10	cm3/1000 strokes : 59.0 Tolerance cm3/1000 strokes : +- 4.0
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 750 : -1.50	rack travel mm : 21.60  Tolerance mm : +- 1.50  Del. quantity  cm3/1000 strokes : 59.0  Tolerance  cm3/1000 strokes : +- 4.0  Check tolerance  cm3/1000s. : +- 5.0  Spreed  Tolerance  cm3/1000 strokes : 6.0  Check tolerance  cm3/1000 strokes : 6.0
FUEL DELIVERY CHA	ARACTERISTICS	‡
Ref. pressure ALDA / ADA hPa Rated speed rpm	: 1100 : 1800	LOW IDLE
Del. quantity cm3/1000 strokes Tolerance		+ Del. quantity + cm3/1000 strokes : 10.3 + Check tolerance
cm3/1000 strokes Check tolerance cm3/1000s.		+ cm3/1000s. : +- 2.3 + Spreed - Check tolerance
Spreed Tolerance cm3/1000 strokes Check tolerance	: 2.5	cm3/1000s. : 1.5
cm3/1000s.	: 3.0	<del></del>
Ref. pressure ALDA / ADA hPa Rated speed rpm Spreed		+ Grad : > 47.00 + Grad : < 44.50
Del. quantity cm3/1000 strokes Tolerance		SETTING PNEUMATIC FAST IDLE (ELA)
cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +- 1.0 : +- 2.0	tontrol lever position degree : 14.0 tolerance degree : + 2.0
Tolerance cm3/1000 strokes Check tolerance	: 2.5	Rated speed rpm : 400
cm3/1000s.	: 3.0	Rack travel in mm : 8.60 Tolerance mm : + 0.80 Del. quantity cm3/1000 strokes : 21.5
HIGH IDLE		Tolerance cm3/1000 strokes : +- 3.5
Ref. pressure ALDA / ADA hPa	: 1100	Check tolerance : +- 4.5

SETTING/TESTING ELECTRONIC IDLE REGULATION (ELR)

control lever

position degree : 14.0 tolerance degree : + 2.0

control lever

position degree : 50.0

ADJUSTMENT

control lever

position degree : 50.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 385

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 25,04,96 Edition : ISO 4113 Test oil

Combination No. : 0 400 864 095

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1175A5C2163

: -7L

: 0 420 232 590 Governer no.

Cust. part No. :

Customer-spec. information : KHD Customer : F4L913 Motor Power KW : 55.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : **←** 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values ____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 3.05 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : + 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1175

Rack travel in mm: 11.95 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 75.5

Tolerance

cm3/1000 strokes : + 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance cm3/1000s.	: 8.0	rack travel mm : 10.90 Rated speed rpm : 1220 Tolerance 1/min : +- 5
Rated speed rpm	: 325	rack travel mm : 4.00
Rack travel in mm Tolerance mm Del. quantity	: 9.40 : +- 0.10	Rated speed rpm : 1280 Tolerance 1/min : +- 15
cm3/1000 strokes Tolerance	: 13.0	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000 strokes Check tolerance	: +- 2.0	Rated speed rpm : 1430
cm3/1000s. Spreed Tolerance	: +- 4.5	rack travel mm : 4.00 Rated speed rpm : 1295
cm3/1000 strokes Check tolerance	: 5.5	
cm3/1000s.	: 9.0	LOW IDLE
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	control lever position degree : 69.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSI	TION	+ Setting point w/out bumper spring
Rated speed rpm	: 800	+ Rated speed rpm : 325 + rack travel mm : 8.90
Rack travel in mm Tolerance mm		Testing:
		+ Rated speed rpm : 325
FULL LOAD DELIVER	Y AT FULL LOAD STOP	rack travel mm : 9.40 Tolerance mm : +- 0.10
Rated speed rpm Aneroid pressure hPa Del. quantity	: 1175 : -	rack travel mm : 2.00 Rated speed rpm : 500 Tolerance 1/min : + 30
cm3/1000 strokes Tolerance	; 75.5	Rated speed rpm : 100
cm3/1000 strokes Check tolerance	: <b>←</b> 1.0	CRT mm min. : > 19.50
cm3/1000s. Spreed Tolerance	: <b>←</b> 3.0	TORQUE CONTROL
cm3/1000 strokes Check tolerance		Rated speed rpm : 1175
cm3/1000s.	: 8.0	rack travel mm : 11.95 Tolerance mm : + 0.05
CONTROL LEVER		Rated speed rpm : 800 rack travel mm : 12.35 Tolerance mm : + 0.05
control lever position degree tolerance degree		Rated speed rpm : 1025 rack travel mm : 12.15 Tolerance mm : +- 0.05
RATED SPEED		‡

## End of test specification sheet

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa Rated speed rpm 008

Del. quantity cm3/1000 strokes : 70.5

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance cm3/1000s. : +-4.0

## **BREAKAWAY**

Rack travel in mm : 10.90 Rated speed rpm : 1220 Tolerance 1/min : +-

## STARTING FUEL DELIVERY

100 Rated speed rpm 20.25 rack travel mm : +- 0.75 Tolerance mm Del. quantity cm3/1000 strokes : 120.0 Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000S.: +- 12.5

## LOW IDLE

325 Rated speed rpm 9,40 rack travel mm Tolerance mm : +- 0.10 Del. quantity 13.0 cm3/1000 strokes : Tolerance 2.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 4.5 Spreed Tolerance 5.5 cm3/1000 strokes : Check tolerance cm3/1000s.9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.04.96 Test oil : ISO 4113

Combination No. : 0 402 046 872

Injection pump

Pump designation : PES6P120A320RS3337

EP type number : 0 412 026 770

Governor

Governer design. : RQV300...1250PA1246K

Governer no. : 0 421 815 480

Cust. part No. : CCEP 5155A 66-217

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 06-02-26 U4

Power KW : 111.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 2 417 413 084

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 135 Tolerance L/h : ← 10.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.10
Tolerance mm : +- 0.05

Check

toterance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 : +- 0.30

Tolerance : + 0.30

Check

tolerance "NW : + 0.50

Start of delivery mark

*NW after s.o.d. : 0.08 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

mm : 21.00

and maximum rack

travel : 19.50 Difference ° CS : 2.00

+	guide sleeve
	travel mm : 6.50
BASIC SETTING	Tolerance mm : +- 0.25
Rated speed rpm : 1250	Rated speed rpm : 530
	guide sleeve
after differences with reads and security after seasonable after any agriculture.	travel mm : 3.77
Rack travel in mm: 10.60 +	Tolerance mm : +- 0.25
Tolerance mm : + 0.05 +	
	Rated speed rpm : 1580
Del. quantity	guide sleeve travel mm : 13.50
cm3/1000 strokes : 140.0 +	travel mm : 13.50 Tolerance mm : +- 0.50
Tolerance	roterance inii 0.30
cm3/1000 strokes : +- 1.0	
1	GUIDE SLEEVE POSITION
Check tolerance	
cm3/1000s. : +- 4.0	Rated speed rpm : 1400
Spreed	Rack travel in mm : 10.50
Tolerance	Tolerance mm : + 1.50
cm3/1000 strokes : 5.0 +	
Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 9.0	FOLL LOAD DELIVERY AT FULL LOAD STOP
CIII37 (COUS 7.0	Rated speed rpm : 1250
Rated speed rpm : 300	Aneroid pressure
Tuted speed 1 piii . 300	hPa : -
Rack travel in mm: -5.80	Del. quantity
Tolerance mm : +- 0.20	cm3/1000 strokes : 140.0
Del. quantity +	Tolerance
cm3/1000 strokes : 29.0 +	cm3/1000 strokes : + 1.0
Tolerance	Check tolerance
cm3/1000 strokes : + 2.0 +	cm3/1000s. : +- 4.0
Check tolerance	Spreed
cm3/1000s. : +- 5.0	Tolerance cm3/1000 strokes : 5.0
Spreed + Tolerance +	Check tolerance
cm3/1000 strokes : 8.0	cm3/1000s. : 9.0
Check tolerance	(1107 (0000)
cm3/1000s. : 12.0	
+	CONTROL LEVER
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR +	control lever
†	position degree : 296.0
GUIDE SLEEVE TRAVEL	tolerance degree : +- 4.0
AOTHE SPEEKE LYNAET	RATED SPEED
Rated speed rpm : 300	WILES OF FER
guide sleeve	rack travel mm : -1.00
travel mm : 1.31 +	Rated speed rpm : 1325
Tolerance mm : + 0.20	Tolerance 1/min : + 5
+	
Rated speed rpm : 1333 +	rack travel mm : -6.60
guide sleeve	Rated speed rpm : 1420
travel mm : 10.40 +	Tolerance 1/min : + 15
Tolerance mm : +- 0.15	rack travel mm : -10.10
Rated speed rom : 900	Tolerance mm : + 0.50
Rated speed rpm : 900 +	TOTAL GRADE GRAD

Rated speed rpm	: 1550
LOW IDLE	
control lever position degree tolerance degree	: 242.0 : + 4.0
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : -5.80 : + 0.10
Rated speed rpm	: 200
CRT mm min.	: < -4.80
Rated speed rpm	: 380
TORQUE CONTROL	
Rated speed rpm	: 1250
Rated speed rpm rack travel mm Tolerance mm	: 750 : −1.60 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	
START CUT-OUT	
Rated speed rpm Rated speed rpm	: > 130 : < 225
Check speed 1/min	: > 110
Check speed 1/min	: < 245
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
hPa Rated speed rpm	: – : 750
Del. quantity cm3/1000 strokes	: 102.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s.	: +- 6.0
CHO/ FUUUS.	0.0

## **BREAKAWAY**

Rack travel in mm: -1.00
Rated speed rpm: 1325
Tolerance 1/min: +- 5

## STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 108.0
Tolerance
cm3/1000 strokes : +- 15.0
Check tolerance
cm3/1000s. : +- 19.0

## LOW IDLE

300 Rated speed rpm -5.80 rack travel mm Tolerance mm : + 0.20 Del. quantity 29.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 25.04.96 Test oil : ISO 4113

Combination No. : 0 402 066 706

Injection pump

Pump designation : PES6P12OA12ORS3358 EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1250P2A613

: -1

Governer no. : 0 421 833 505

Cust. part No. : 3927357

Customer-spec. information

Customer : CDC

Motor : 6BTA-590 ELITE

Power KW : 138.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance °NW : + 0.50

Start of delivery blocking

*NW after s.o.d.: 7.75

Tolerance :  $\leftarrow$  0.50

Check

tolerance *NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.30

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 140.0

	1	Tolerance	
Tolerance cm3/1000 strokes : +-	1.0	cm3/1000 strokes Check tolerance	
Check tolerance cm3/1000s. : +-	3.0	cm3/1000s.	: 7.5
Spreed Tolerance		CONTROL LEVER	
cm3/1000 strokes :	4.0	control lever position degree	
Check tolerance cm3/1000S. :	7.5	tolerance degree RATED SPEED	: +- 4.0
Rated speed rpm :	475		40.70
Rack travel in mm : Tolerance mm : +- Del. quantity	5.40	rack travel mm Rated speed rpm Tolerance 1/min	: 10.30 : 1295 : +- 5
cm3/1000 strokes : Tolerance	21.0	rack travel mm Rated speed rpm	: 4.00 : 1375
cm3/1000 strokes : +- Check tolerance	+	Tolerance 1/min	: +- 15
cm3/1000S. : +- Spreed Tolerance	4.5	rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1500
cm3/1000 strokes : Check tolerance	6.0		
cm3/1000s. :	9.0	LOW IDLE	
(B) SETTING OF INJECTION WITH GOVERNOR	N PUMP	control lever position degree tolerance degree	
GUIDE SLEEVE POSITION	<u> </u>	Testing:	
Rated speed rpm :	800	Rated speed rpm rack travel mm	: 475 : 5.40
Rack travel in mm : Tolerance mm : +-		Tolerance mm	: + 0.10
governor spring pre-tension click setting x :	4.75	rack travel mm Rated speed rpm Tolerance 1/min	: 570
		SET IDLE AUXILIAR	Y SPRING
FULL LOAD DELIVERY AT FU	+	rack travel mm	: 2.00
Aneroid pressure	250 +	TORQUE CONTROL	
Del. quantity cm3/1000 strokes : 1	+	Rated speed rpm rack travel mm Tolerance mm	: 1250 : 11.30 : +- 0.05
cm3/1000 strokes : +- Check tolerance	1.0	Rated speed rpm	
cm3/1000s. : +- Spreed	3.0	rack travel mm Tolerance mm	: 11.30 : + 0.10

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm 500 1500 Pressure hPa 11.30 rack travel mm : +- 0.05 Tolerance mm

#### **MEASUREMENT**

Pressure hPa 500 Rated speed rpm 9.00 rack travel mm : + 0.20 Tolerance mm

500 Rated speed rpm

900 Pressure hPa 10.75 rack travel mm : +- 0.20Tolerance mm

560 Pressure hPa 9.55 rack travel mm : +- 0.05 Tolerance mm

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 hPa 750 Rated speed rpm Del. quantity cm3/1000 strokes : 157.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0 Check tolerance

cm3/1000s.

12.0

Aneroid pressure

hPa Rated speed rpm 500

Del. quantity

cm3/1000 strokes : 97.0

Tolerance

2.0 cm3/1000 strokes : +-

Check tolerance

4.0 cm3/1000s.: +-

#### BREAKAWAY

Rack travel in mm : 10.30 Rated speed rpm : 1295 Tolerance 1/min : +- 5

### STARTING FUEL DELIVERY

Rated speed rpm 100 : 20.25 rack travel mm : +- 0.75 Tolerance mm Del. quantity cm3/1000 strokes : 165.0 Tolerance cm3/1000 strokes : + 20.0Check tolerance cm3/1000S.: +- 25.0

### LOW IDLE

Rated speed rpm 475 rack travel mm 5.40 : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 21.0 Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000S. 4.5 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.03.96 Test oil : ISO 4113

Combination No. : 0 402 646 756

Injection pump

Pump designation : PE6P120A320LS7834

: -10

EP type number : 0 412 626 853

Governor

Governer design. : RQV300...1050PA1168

: -6

Governer no. : 0 421 814 138

Cust. part No. : 0260743902

Customer-spec. information
Customer : MB-NFZ
Motor : 0M401 LA
Power KW : 230.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

______

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : + 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 550

Rack travel in mm : 14.80 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 230.0

<b>-</b> 1		1
Tolerance	1 0	+ Rated speed rpm : 1183
cm3/1000 strokes	: + 1.0	+ Rated speed rpm : 1183 + guide sleeve
Check tolerance		travel mm : 10.00
cm3/1000s.	: +- 4.0	+ Tolerance mm : +- 0.25
chor 1000.	4.0	100010100 11111 . 0.25
Spreed		Rated speed rpm : 1280
Tolerance		+ guide sleeve
cm3/1000 strokes	: 5.0	+ travel mm : 11.50
-1 1		_ + Tolerance mm : + 0.50
Check tolerance	0.0	†
cm3/1000s.	: 9.0	GUIDE SLEEVE POSITION
Rated speed rpm	: 300	I GOIDE STEENE LOSILION
raced speed (bill	. 500	Rated speed rpm : 1145
Rack travel in m	m: 6.30	Tracea opeca (piii ) (1)
Tolerance mm	: +- 0.30	+ Rack travel in mm : 13.80
Del. quantity		+ Tolerance mm : + 1.30
cm3/1000 strokes	: 13.0	+
Tolerance	. 70	
cm3/1000 strokes	: +- 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s.	: +- 6.0	Rated speed rpm : 550
Spreed	0.0	Aneroid pressure
Tolerance		+ hPa : 1000
cm3/1000 strokes	: 6.0	Del. quantity
Check tolerance		+ cm3/1000 strokes : 230.0
cm3/1000s.	: 10.0	+ Tolerance
		cm3/1000 strokes : +- 1.0 Check tolerance
		+ CRECK COLECTORE
(P) SETTING OF TH	VIECTION PLIMP	
(B) SETTING OF IN	NJECTION PUMP	+ cm3/1000s. : +- 4.0
(B) SETTING OF IN WITH GOVERNOR	NUECTION PUMP	+ cm3/1000s. : +- 4.0 + Spreed + Tolerance
WITH GOVERNOR		+ cm3/1000s. : + 4.0 + Spreed + Tolerance + cm3/1000 strokes : 5.0
		- cm3/1000s. : + 4.0 + Spreed - Tolerance - cm3/1000 strokes : 5.0 - Check tolerance
WITH GOVERNOR  GUIDE SLEEVE TRAN	/EL	+ cm3/1000s. : + 4.0 + Spreed + Tolerance + cm3/1000 strokes : 5.0
GUIDE SLEEVE TRAN	/EL	- cm3/1000s. : + 4.0 + Spreed - Tolerance - cm3/1000 strokes : 5.0 - Check tolerance
GUIDE SLEEVE TRAN	/EL : 300	- cm3/1000s. : + 4.0 + Spreed - Tolerance - cm3/1000 strokes : 5.0 - Check tolerance
GUIDE SLEEVE TRAN Rated speed rpm guide sleeve travel mm	/EL	- cm3/1000s. : + 4.0 - Spreed - Tolerance - cm3/1000 strokes : 5.0 - Check tolerance - cm3/1000s. : 9.0
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : +- 0.20	- cm3/1000s. : +- 4.0 - Spreed - Tolerance - cm3/1000 strokes : 5.0 - Check tolerance - cm3/1000s. : 9.0 - CONTROL LEVER
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm	/EL : 300 : 1.29 : +- 0.20	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	/EL : 300 : 1.29 : + 0.20 : 1108	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	/EL : 300 : 1.29 : ← 0.20 : 1108 : 8.53	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	/EL : 300 : 1.29 : + 0.20 : 1108	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : ← 0.20 : 1108 : 8.53	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	/EL : 300 : 1.29 : +- 0.20 : 1108 : 8.53 : +- 0.15 : 558	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Guide sleeve Travel mm Tolerance mm  Rated speed rpm	/EL : 300 : 1.29 : +- 0.20 : 1108 : 8.53 : +- 0.15 : 558 : 4.53	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : +- 0.20 : 1108 : 8.53 : +- 0.15 : 558	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25	cm3/1000s. : + 4.0  Spreed  Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : +- 0.20 : 1108 : 8.53 : +- 0.15 : 558 : 4.53	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25	cm3/1000s. : + 4.0  Spreed  Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5
WITH GOVERNOR  GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25 : 608	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : + 15
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25 : 608 : 5.03 : + 0.25	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : + 15  rack travel mm : 0.75
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Rated speed rpm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25 : 608 : 5.03 : + 0.25	cm3/1000s. : + 4.0
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25 : 608 : 5.03 : + 0.25 : 820	cm3/1000s. : + 4.0  Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0  CONTROL LEVER  control lever position degree : 121.0 tolerance degree : + 4.0  RATED SPEED  rack travel mm : 13.80 Rated speed rpm : 1095 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : + 15  rack travel mm : 0.75
GUIDE SLEEVE TRAN  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm Rated speed rpm	/EL : 300 : 1.29 : + 0.20 : 1108 : 8.53 : + 0.15 : 558 : 4.53 : + 0.25 : 608 : 5.03 : + 0.25	cm3/1000s. : + 4.0

Control Lever   position degree : + 0.0   Tolerance degree : + 4.0   Rated speed rpm : > 100   Rated speed rpm : > 220   Rated speed rpm : 4.50   Speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : > 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/min : = 80   Check speed 1/	LOW IDLE		<del> </del>	Pressure hPa rack travel mm Tolerance mm	: 600 : 14.15 : + 0.20
Rated speed rpm : 300	position degree	: 60.0 : +- 4.0	+		
Tack travel mm	Testing:		‡	Rated speed rpm Rated speed rpm	: > 100 : < 220
Rated speed rpm : 200  CRT mm min. : > 6.30  Rated speed rpm : 350  Rated speed rpm : 350  Aneroid pressure hPa : 1000 Rated speed rpm : 1050 bel. quantity cm3/1000 strokes : 229.0 Tolerance mm : + 0.05  Rated speed rpm : 1050 Spreed Tolerance cm3/1000 strokes : + 6.0 Spreed Tolerance mm : + 0.10 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 Rated speed rpm : 14.80 Tolerance mm : + 0.10 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0 Rated speed rpm : 14.80 Tolerance mm : + 0.10 Check tolerance cm3/1000 strokes : 12.0 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 12.0 Tolerance mm : + 0.10 Check tolerance cm3/1000 strokes : 129.0 Tolerance mm : 500 Del. quantity cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80	Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.50 : ← 0.10	† †	speed 1/min Check	
Rated speed rpm : 350  Aneroid pressure hPa : 1000	Rated speed rpm	: 200	†	speed 1/min	<b>:</b> < 240
hPa	CRT mm min.	: > 6.30	Ŧ	FUEL DELIVERY CHA	RACTERISTICS
Del. quantity	Rated speed rpm	: 350	<del>-</del>	hPa	: 1000 - : 1050
Rated speed rpm	TORQUE CONTROL		+	Del. quantity	
Rated speed rpm : 1050 rack travel mm : 14.80 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 14.80 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 14.80 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 400 Rated speed rpm : 400 Rated speed rpm : 14.80 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 4.0 Spreed Tolerance cm3/1000 strokes : 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Tolerance mm : 14.80 Rated speed rpm : 400 Rack travel mm : 10.50 Tolerance mm : + 0.15 Rack travel in mm : 13.80 Rated speed rpm : 1095	Rated speed rpm rack travel mm	: 550 : 14.80	<del> </del>	Tolerance cm3/1000 strokes	: <del>+</del> 3.0
Tolerance mm : 14.80 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 14.80 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 14.80 Tolerance mm : + 0.10  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Pressure hPa : 1000 rack travel mm : 14.80 Tolerance cm3/1000 strokes : 8.0 Tolerance cm3/1000s. : + 4.0 Spreed Fressure hPa : 1000 Tolerance cm3/1000s. : 12.0  MEASUREMENT  Pressure hPa : - Rated speed rpm : 400 REASUREMENT  Pressure hPa : - Rated speed rpm : 400 REASUREMENT  REACK travel mm : 10.50 Tolerance mm : + 0.15 Reack travel in mm : 13.80 Reack travel in mm : 13.80 Reack travel in mm : 13.80 Reack travel in mm : 10.95	Rated speed rpm	: 1050	Ţ	cm3/1000s.	
Rated speed rpm : 700 rack travel mm : 14.80 Tolerance mm : + 0.10  Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 129.0 Tolerance cm3/1000 strokes : + 1.0 SETTING  SETTING  Rated speed rpm : 400 Pressure hPa : 1000 rack travel mm : 14.80 Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s : 12.0  MEASUREMENT  Pressure hPa : - Rack travel in mm : 13.80 Rated speed rpm : 10.50 Tolerance mm : + 0.15 Rack travel in mm : 13.80 Rated speed rpm : 10.95	rack travel mm Tolerance mm	: 14.80 : + 0.10	‡	cm3/1000 strokes	
ANEROID/ALTITUDE COMPENSATOR TEST  ANEROID/ALTITUDE COMPENSATOR TEST  COMPENSATOR TEST  Compensator Test  Compensator Te	Rated speed rpm rack travel mm	: 700 : 14.80	Ŧ	cm3/1000s.	: 12.0
Del. quantity   Cm3/1000 strokes : 129.0   Tolerance   Cm3/1000 strokes : 129.0   Tolerance   Cm3/1000 strokes : + 1.0   Check tolerance   Cm3/1000s. : + 4.0   Spreed   Tolerance   Cm3/1000 strokes : 8.0   Check travel mm : 14.80   Check tolerance   Cm3/1000 strokes : 8.0   Check tolerance   Cm3/1000s. : 12.0   Check tolerance   Cm3/1000s. : 12.0   Check tolerance   Cm3/1000s. : 12.0   Check travel mm : 10.50   Check travel mm : 10.50   Check travel in mm : 13.80   Rated speed rpm : 1095   Check travel in mm : 13.80   Rated speed rpm : 1095   Check travel in mm : 10.95   Check travel in	Tolerance mm	: +- 0.10	‡	hPa	: -
Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Pressure hPa : 1000 Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 Tolerance mm : + 0.05 EREAKAWAY  Pressure hPa : - BREAKAWAY  BREAKAWAY  BREAKAWAY  Rated speed rpm : 400 Rack travel mm : 10.50 Rack travel in mm : 13.80 Rated speed rpm : 1095				Del. quantity	
Rated speed rpm : 400 Pressure hPa : 1000 Tolerance rack travel mm : 14.80 Tolerance mm : + 0.05  MEASUREMENT  Pressure hPa : - Rated speed rpm : 400 rack travel mm : 10.50 Tolerance mm : + 0.15  Rack travel in mm : 13.80 Rated speed rpm : 1095			‡	Tolerance cm3/1000 strokes	
Pressure hPa       : 1000       + Tolerance         rack travel mm       : 14.80       + cm3/1000 strokes       : 8.0         Tolerance mm       : + 0.05       + Check tolerance         cm3/1000s       : 12.0         MEASUREMENT       + BREAKAWAY         Pressure hPa       : - BREAKAWAY         Rated speed rpm       : 400         rack travel mm       : 10.50         Tolerance mm       : + 0.15         Rack travel in mm       : 13.80         Rated speed rpm       : 1095		: 400	† †	cm3/1000s.	: +- 4.0
cm3/1000s. : 12.0	Pressure hPa rack travel mm	: 1000 : 14.80	‡	cm3/1000 strokes	: 8.0
Rated speed rpm : 400 + rack travel mm : 10.50 + Rack travel in mm : 13.80 + Rated speed rpm : 1095		. 1- 0.05	<u> </u>		: 12.0
Rated speed rpm : 1095	Rated speed rpm		+ + + +	BREAKAWAY	
Rated speed rpm : 400 + Tolerance T/min : + 3			‡	Rated speed rpm	: 1095
+			‡	Toterance 1/min	; — 3
Pressure hPa : 400 +	rack travel mm	: 12.90	<b>‡</b>	STARTING FUEL DEL	IVERY

Rated speed rpm Del. quantity	:	100
cm3/1000 strokes	:	210.0
Tolerance cm3/1000 strokes	: +-	- 15.0
Check tolerance cm3/1000s.	: +	- 19.0

# LOW IDLE

Rated speed rpm	:	300
rack travel mm	:	6.30
Tolerance mm	: +-	0.30
Del. quantity		
cm3/1000 strokes	:	13.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	10.0
	-	